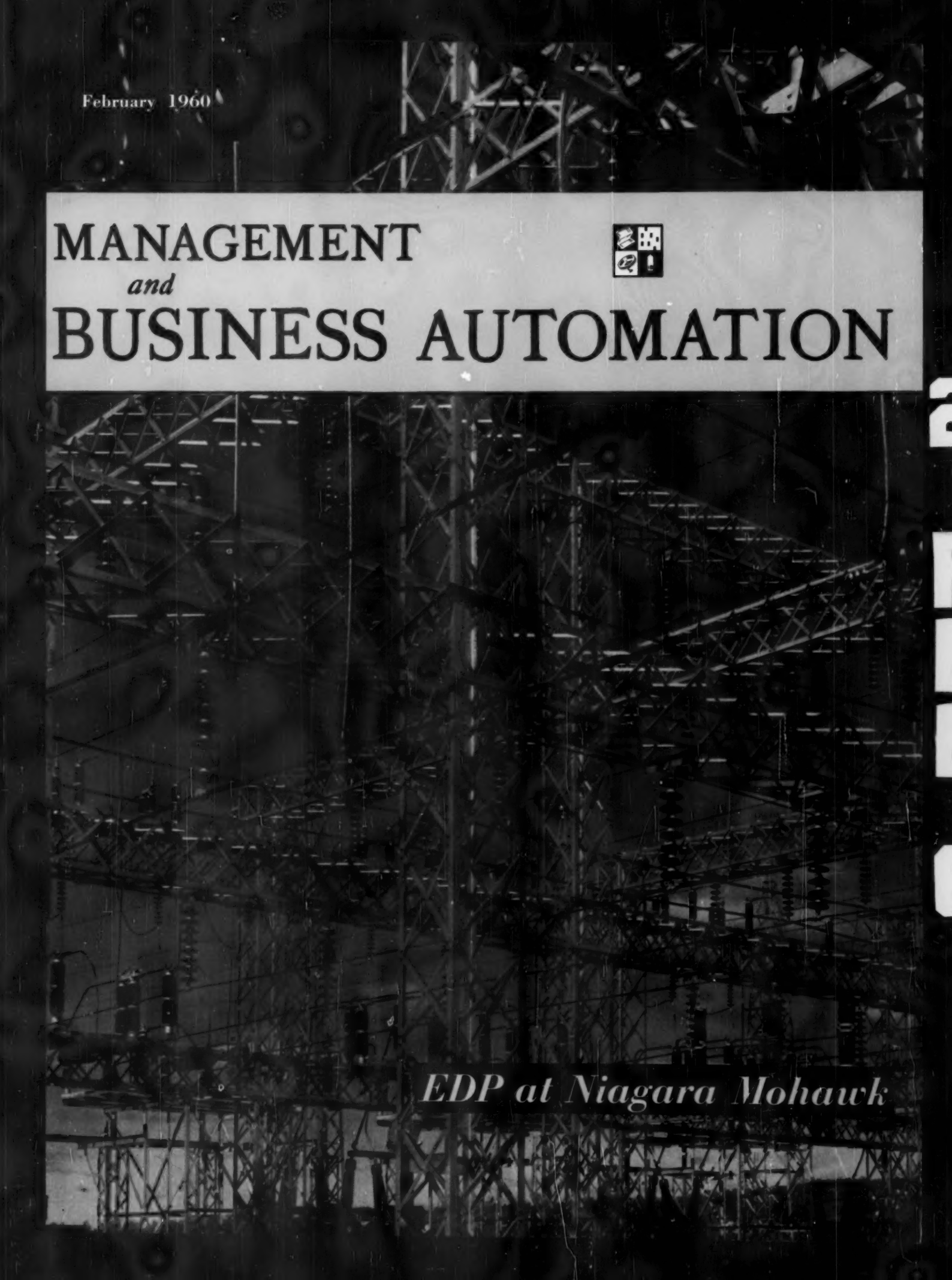
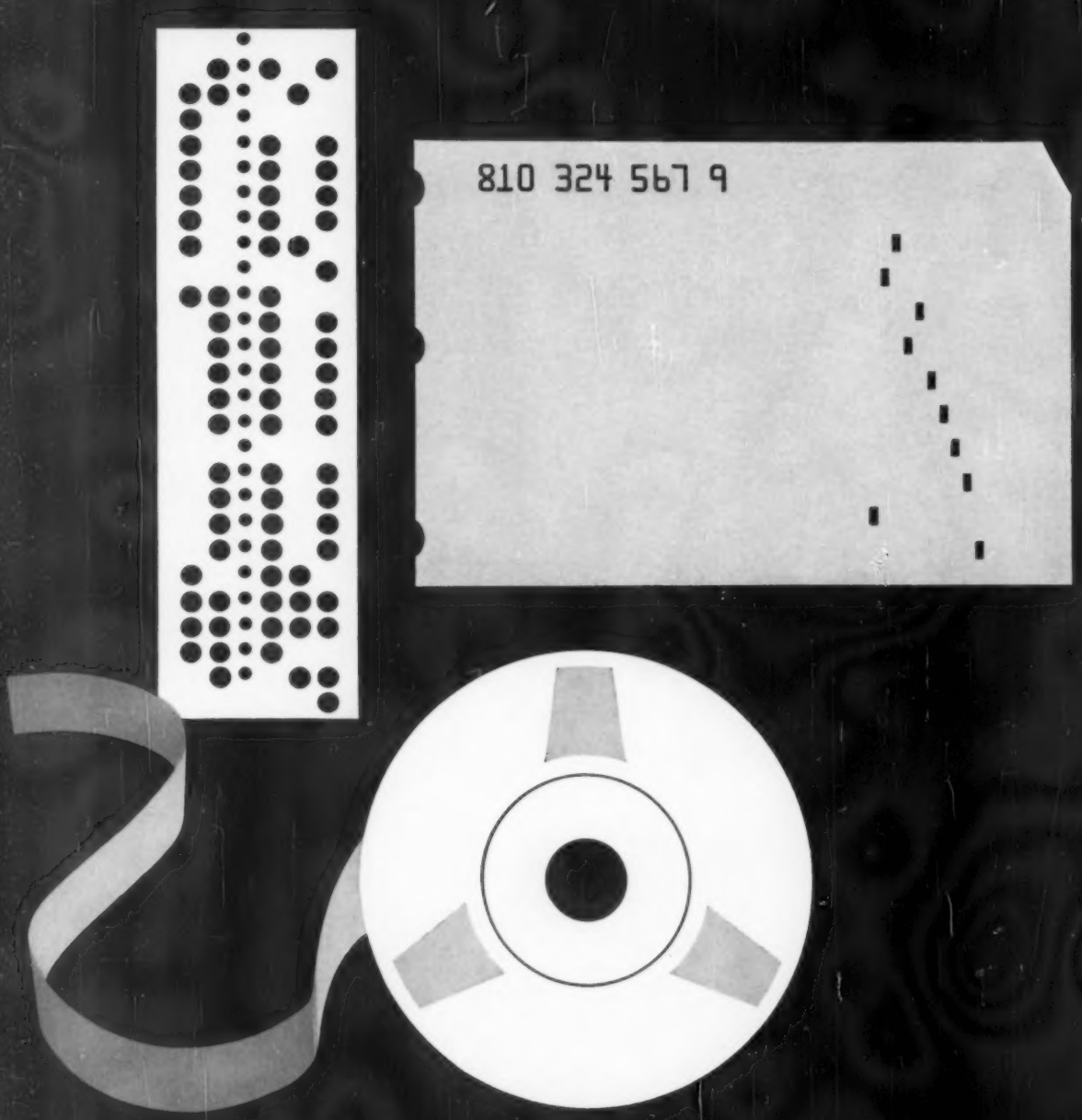
February 1960

MANAGEMENT *and* BUSINESS AUTOMATION



EDP at Niagara Mohawk



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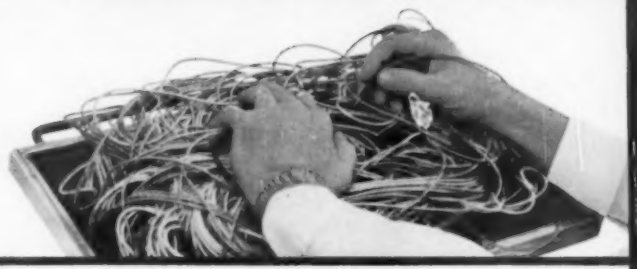

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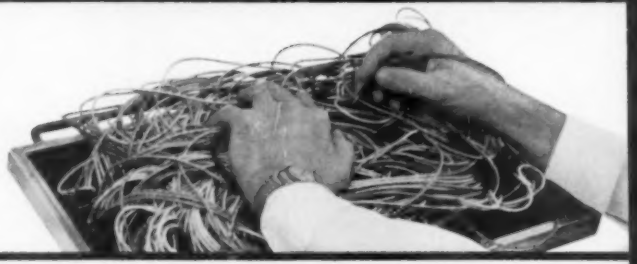

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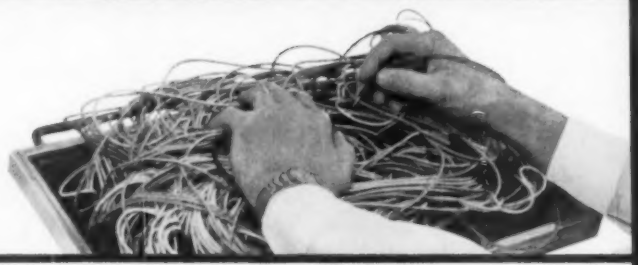

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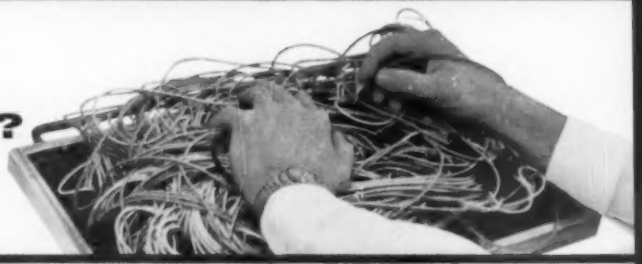

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MANAGEMENT *and* BUSINESS AUTOMATION

February, 1960
Vol. 3, No. 2

New ideas, developments, applications, results, and the human impact of business automation in commerce, industry and government.

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Scanning the Issue...

The dramatic cover photo of a high voltage transmission line sets the theme for an interesting story of how one of the nation's major utility companies planned its switch to electronic data processing. Billing for some 1,400,000 electric and gas customers is the main application involved in the move from punched cards to a large-scale computer system. **Niagara Mohawk — Electronics for Its Future,** page 14 . . . . . From the pen of John W. Haslett, veteran systems authority, comes a challenging article on **A New Role for the Systems Man,** page 20. Mr. Hazlett emphasizes the necessity for the systems man to abandon the traditional role of analyst in favor of the "new trend toward the synthesis of many related procedures into an integrated system for the company as a whole" . . . An installation that started out as a means of merely reducing accounting department paperwork, and then developed into the key function of the company's entire marketing program, is described in **Market Managing by Data Processing,** page 24. The story concerns the L. B. Foster Co., large supplier of steel product supplies . . . **Forms Design Plays Key Role in IDP System,** page 28, relates how the Tennessee Products and Chemical Corp. solved two troublesome problems—order-entry invoicing and traffic control—with an IDP system based on new forms concepts . . . The automation spotlight turns to a most unusual area as Bill Christian takes the reader behind the scenes of the 1960 Olympic Winter Games in **Squaw Valley to the World in Three Minutes,** page 38. Using the ADP knowhow — and equipment — of American manufacturers, the Olympic officials have set up an ultramodern data processing system for scoring and reporting the 26 major events.

2
ECONOMY
Processes more data per dollar in a working day, on small-volume applications or large

Honeywell scientists halve the cost of sorting business records

Sorting records on most modern data processing systems has been heretofore impractical, uneconomical. The function has required too much processing time, too much extra equipment.

Honeywell scientists originally licked this problem with DATAmatic 1000, the first system with speeds sufficient to make sorting economical.

This advantage is even more pronounced with Honeywell 800. Its magnetic tape speeds are the fastest available. Its internal operating speed is considerably faster than any comparably priced system. This performance, coupled with new Honeywell-developed electronic sorting techniques, actually halves the cost of sorting records. For many companies, it may mean a saving of thousands of dollars a month.

Sorting is but one of the many areas of business data processing in which Honeywell 800 can cut your costs.

For complete details about this remarkable system, call or write *Minneapolis-Honeywell, Datamatic Division, Newton Highlands 61, Massachusetts, or Honeywell Ltd., Toronto 17, Ontario.*

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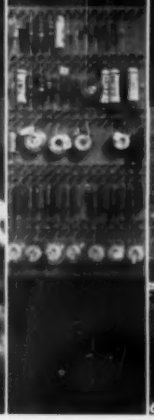

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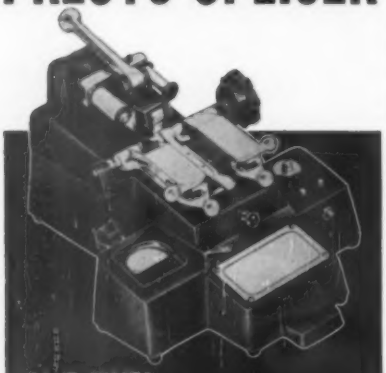

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Circle Reader Service Card No. 2-56

RANDOM ACCESS

Information bits from the editor's memory file

Where Else But In Texas!

A group of Sherman County, Texas farmers have decided that 20 years of farm planning by Uncle Sam hadn't been of much help, so they've turned to the computer for suggestions. Pooling their money the farmers hired a private service to make a computer study of their operations. For six months the service fed all kinds of data into the computer, including the size of farms, capital available, probable returns on various crops, labor costs, soil and climate conditions, and other bits of information. From this came 24 different plans, each tailored to a particular operation.

One plan which was adopted by a farmer based operations on a section of land, 604 acres. The plan required $25,636 in operating capital for a year and $15,000 for new facilities. The farmer would grow 303 acres of wheat, 239 acres of grain sorghums to sell, and 31 acres for livestock feed, and 566 pigs. The plan is in its first year of operation and the results are not yet available.

At $8.50 a Pound

You may be having automation with your eggs some morning. At the recent International Live Stock Exposition, the grand champion porker was U. K. Automation, who went to the Agar Packing Co. of Chicago for $8.50 per pound.

Casey at the Computer

The day of the push-button baseball manager may actually be here. Out at UCLA they have taught a 709 computer how to "play" and decide what is the best baseball strategy under given conditions.

Batting statistics of a representative major league line-up have been used. Tables have been made showing the desired probability of selecting each of 13 possible plays. Individual innings are then played by the computer using random numbers to select the plays.

Varying the conditions according to the lead-off batter, location of base runners and number of outs, the computer can give a quantitative analysis of such strategy as the sacrifice, stolen base or intentional walk.

Organizational Climate

Bankers have been urged to create the proper "organizational climate" before deciding to automate their paperwork. George E. Madill, vice president, National Bank of Detroit explained to an ABA conference that the climate he referred to came when both top management and operations people achieved a balance in knowledge of electronics.

Trade-in Time?

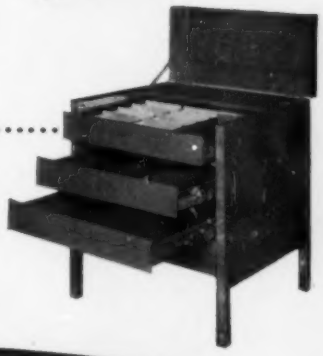
A computer has tackled the provocative question of when is the best time to trade in your old car on a new model. According to Popular Science magazine, people who buy new cars should run them no more than 45,000 miles or four years if they're in the Big Three class; on larger cars the limits are 60,000 or five years.

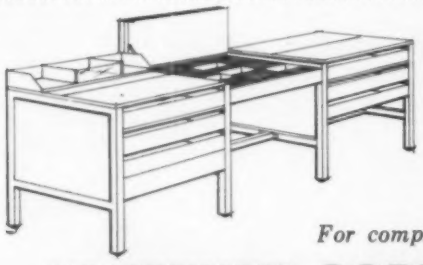
The computer report advised those interested in economy rather than prestige to buy a car that is three years old, and run it no more than three or four years.

Really New TAB CARD FILES

MODEL 25000 provides maximum accessible capacity in minimum floor space. Ideal for tab card operations which involve authorizing, matching or reference to cards in the file. The trays utilize the time-proven Craig "V" notch feature, and contain aluminum control plates. Each file provides 682½" of filing space in only 12 square feet of floor area.

MODEL 26244 is available in various combinations of pedestal and single level span sections. Designed for seated operation — and especially suited for high capacity filing and reference installations. Though small in size, these files contain a surprisingly high capacity, all of which is easily accessible from one comfortable seated position.





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. . . *from the* Publisher's Desk

THIS column has spared no words in telling MBA readers of the many virtues of our editorial program. So it was no great surprise when a generous number of letters, telegrams and phone calls descended on us after our big "goof" in the December issue.

This prompt reaction stemmed from an error in the article concerning sample tests for use in the selection of data processing personnel. Specifically, wrong answers were listed for two of the questions in the tests.

Typical of the letters received was a very detailed explanation of exactly why the answer to problem No. 3 should have been "C" and problem No. 4, "E". Others poked fun at the author, Miss Blumer, for illustrating so clearly that test results must be used with great caution.

Some readers were loyal enough to believe that the errors were intentional, as one reader put it, ". . . merely for the purpose of determining how many people would be curious enough to inquire about it." Another asked, "Was there a devious purpose behind them?"

These were not our intentions. The errors were a proofreading oversight, as our editors explained last month in the "Letters" column.

We are sorry for the confusion, yet gratified that readers were quick to notice the slip-up—a response which gives evidence of the accuracy they have come to expect. It also indicates the intense interest in this type of feature article.

To those who wondered " . . . maybe I'm in the wrong field," have no fears. You no doubt passed with flying colors.

Charles W. Gilbert

MANAGEMENT *and* BUSINESS AUTOMATION

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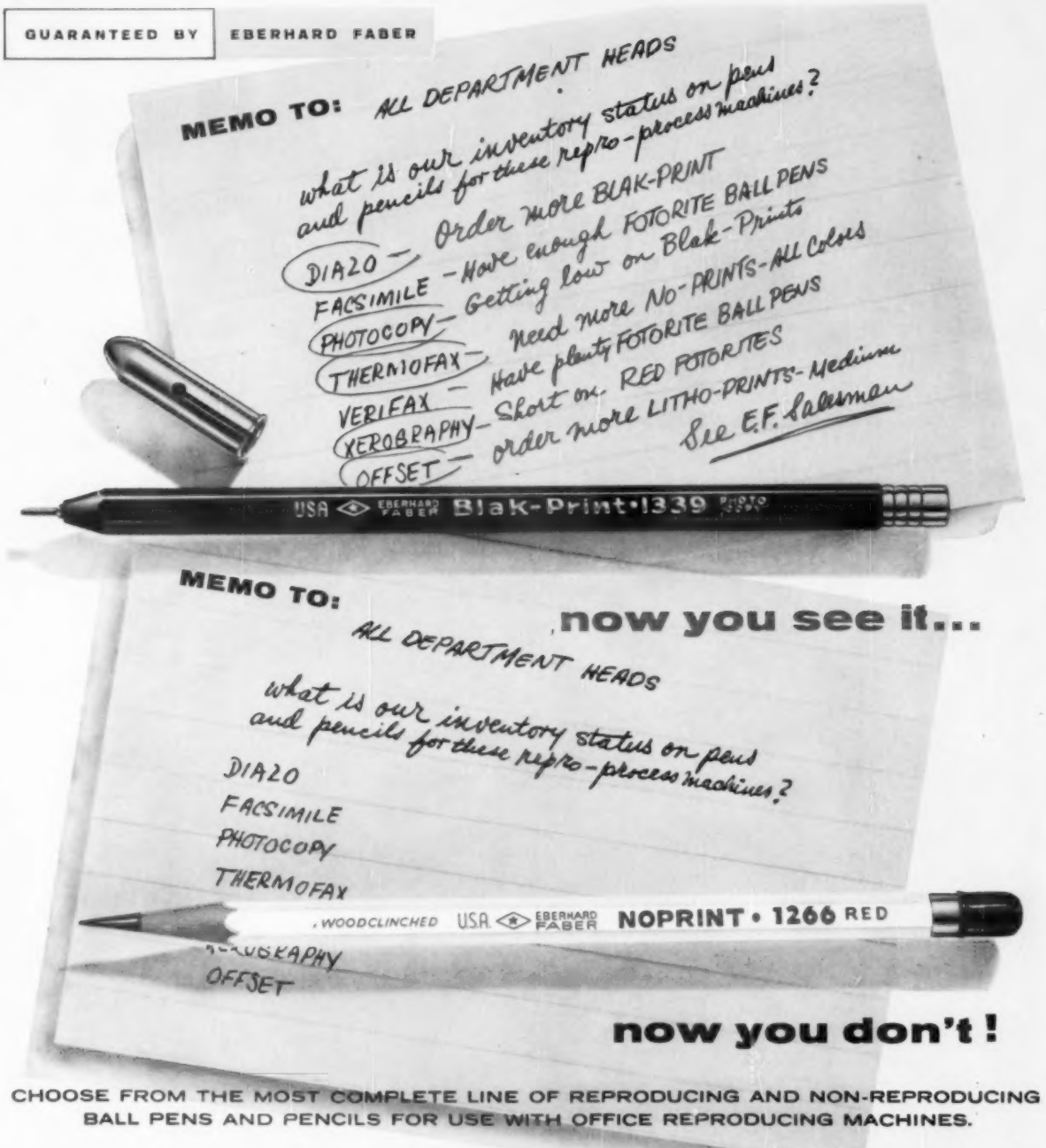
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For More Information Circle Reader Service Card No. 2-60

Letters

Ed. Note—In the December Letters Column, Mr. Lionel Griffith expressed some personal views about the October, 1959, editorial entitled "Why Overlook the Systems Man?" His comments set off a chain reaction in defense of the men who work in systems and procedures. The following letters are among the many which have expressed strong convictions on the subject.

Dear Sir:

To my way of thinking, Mr. Griffith's letter in the December issue missed the message and the point you were making in your editorial of October, 1959. Either that, or he has had very restricted and limited associations with the many fine people in the internal systems field. It is obvious to me that Mr. Griffith does not see, or does not want to see, the value and importance of internal systems men, or else he is afraid that they will encroach on his area of operations and point out pitfalls in his area.

Let me say that I am somewhat in sympathy with his remarks about external systems people, but I most certainly take exception to his castigations about internal systems men within business institutions. His innuendoes about the "systems man fiddling around with other than useful work" and "more frequently than not the so-called systems man is nothing more than a glorified forms design expert" leads me to believe that when he was a systems man himself, he failed to grasp the purpose of his job. . .

. . . Could it have been that the top management of his company where he was a systems man at one time did not want to face up to realities? I can only come to the conclusion that in the company where he was a systems man, a very poor job of selecting people to do systems work was done . . .

. . . As responsible members of the management profession, methods and procedures analysts or systems people are expected to help achieve effective management and to keep it alive and alert. Their services have become indispensable to the coordinated administration of all business activities. You have heard and will continue to hear more about the importance that methods and procedures work or systems work plays in a company.

Cooperation among both line and staff groups helps us to find efficiency and economy in operations and methods. Since we all are engaged in highly competitive businesses where the penalty for inefficient methods and procedures is ultimate failure, they must be kept under constant observation. They must be tried and retried, again and again. The ultimate responsibility for improvement does not rest upon any one individual or department. It rests with an entire organization. No one is exempt.

C. A. Marquardt
Vice President,
State Farm Mutual
Automobile Insurance Co.

Dear Sir:

Your December issue presents a most unusual contrast which emphasizes the "editorial change of pace" mentioned on Page 7 (The Publisher's Column). On Page 5, you publish a letter by Mr. Lionel E. Griffith which is viciously and destructively critical of the systems profession. On page 7, your editorial rhapsodizes on the subject of "editorial height." This is indeed a "change of pace!"

Mr. Griffith's letter will be dismissed by most business executives on the grounds that exactly the same comments are applicable to any staff function in any company. To paraphrase one sentence of the letter:

"We have had the opportunity of observing accountants (and, by the way, I have been one) and we would venture to say that of those companies (sic) we have been associated with, only one in 500 can do anything other than extremely mundane run-of-the-mill work."

My point is that by changing the words "systems men" to "accountants" and by changing "one in 50" to "one in 500" my statement above is possibly even more accurate than Mr. Griffith's. And, except for the statement "I have been one," I could substitute Industrial Relations men, Data Processing men, Production Control men, Legal men, or any other staff or administrative personnel.

It is most unfortunate that people like Mr. Griffith must bring forth damning indictments of an entire profession in order to rationalize the failures inherent in any relatively new approach to solving the ever-changing problems of our modern way of life. I suspect he also writes letters to the editors of engineering magazines every time a missile fails to get off the ground at Cape Canaveral.

"The blunders committed in the use of data processing equipment" is indeed a harsh appraisal of the men who have the vision and courage to open up an entirely new concept of business administration. The fearful, the lazy, or the complacent sit back and criticize, while the courageous uncover the pitfalls and traps in the new way. Later on, fortified with innumerable case histories, these fearful, lazy or complacent ones will venture out on the now secure route. Let us hope, for the sake of their business associates, they are not too late.

W. L. Wallace
Los Gatos, Calif.

Dear Sir:

It was with interest and a good deal of bristling that I read a letter to the Editor by Mr. Lionel E. Griffith, which, though in deference to Mr. Griffith may not have been meant this way, was very critical of a highly difficult position.

In the world of systems, as in the world of medicine, there are a great many different classifications of systems men required, right down to the little mother who has to diagnose her child's sniffles. He fails to realize that every supervisor, more than that—every office worker, must be something of a systems person to understand what they are doing and why they are doing it.

A data processing "engineer" cannot presume to be any more the systems man than can this office worker. The information a data processing man carries in his memory in magnetic drums, tapes,

(*Continued on Page* 48)

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Automated paperwork production has saved thousands of dollars a year and expedited customer deliveries for B. F. Goodrich Tire Company, a Division of The B. F. Goodrich Company. Using A. B. Dick automated offset duplicators, they've increased the efficiency of their integrated data processing system, doubled the speed of internal order-invoice paperwork and all but eliminated the chance of errors.

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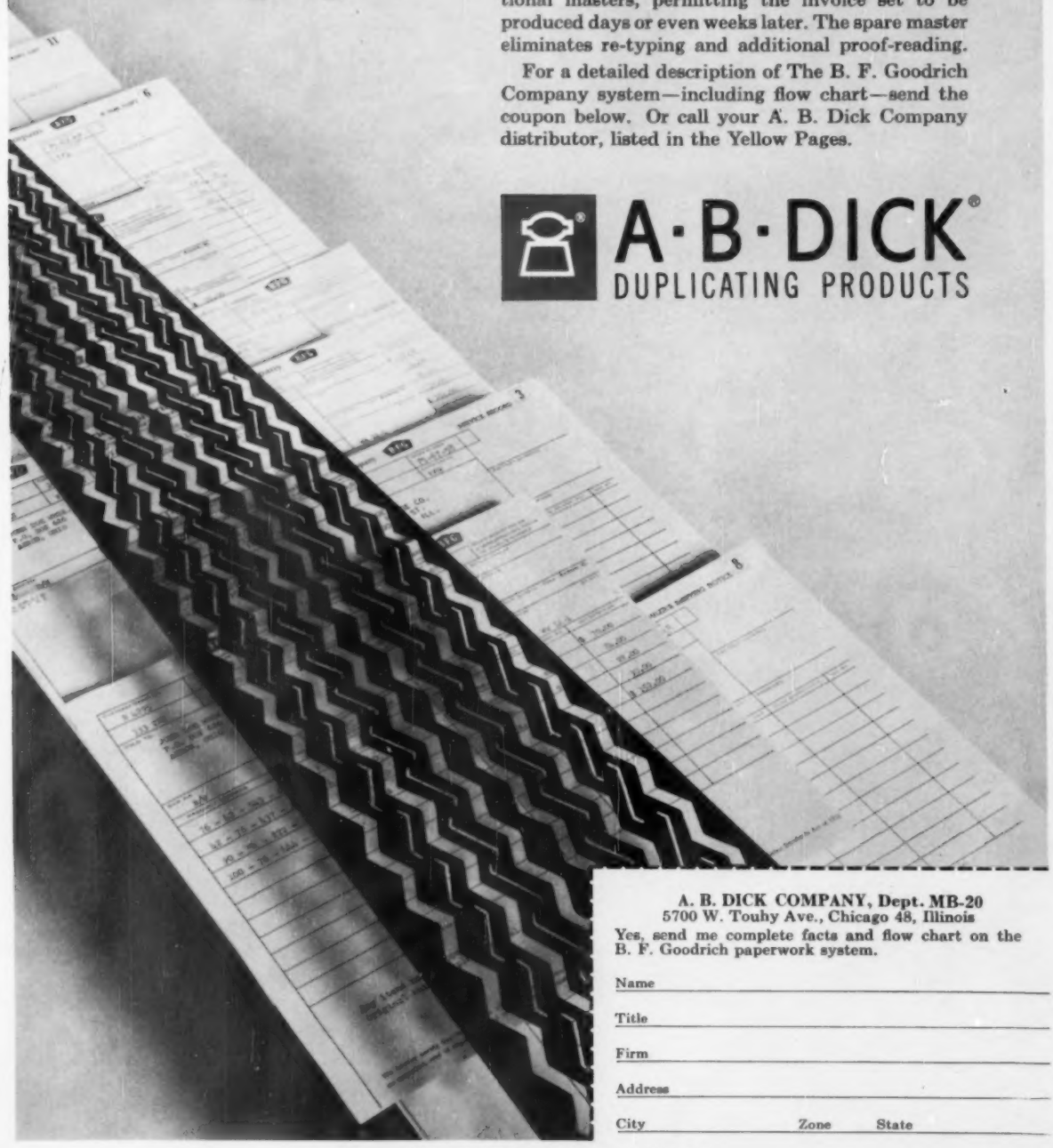

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Niagara Mohawk—

Electronics for Its Future

Three punched-card installations are giving way to a 501 computer system which will handle the utility billing for some 1,400,000 power customers.

George J. Brett, left, vice president and controller, and Harold E. Steiner, assistant controller and head of the methods department, study the scale model of Niagara's system.

THREE years of planning, preparation and patience will be climaxed this fall at the Niagara Mohawk Power Corp., with the transfer of the company's accounting and allied operations from conventional punched card equipment to a large-scale computer system.

Niagara Mohawk, with headquarters in Syracuse, N. Y., serves an area with a population of over three million. There are about 1,400,000 electric and gas customers; and this group is growing at a rate of 30,000 customers annually. Approximately 70 percent of the total are billed monthly, with the remainder being billed bimonthly. It was because of its large volume and highly repetitive operations that the customer accounting application was selected for the initial and major function of the electronic data processing system—a transistorized RCA 501.

EDP activity at Mohawk began in September, 1957, when an analysis group was formed to conduct a feasibility study of the customer accounting procedures, to review equipment being offered by the various manufacturers, and to develop a system that would meet Mohawk's progressively increasing needs.

Invitations were sent to six manufacturers to present specifications for an EDP system that would be both practical and economically advantageous. Consultations were held with each manu-

Members of Niagara Mohawk's pioneer EDP team check out the first magnetic tape produced in a program test session. Shown left to right are Harold Hedges, Jr., Allan Britton, David Bandera, and Louis R. Kavanau, resident RCA methods specialist at Niagara Mohawk. Also, continuing in line, John Ward, Robert Brunner, and Marshall Kagan, a representative of Price Waterhouse & Co.

facturer during the development stage and final proposals were submitted by each manufacturer in March, 1958. Several months were spent in evaluating the various proposals, and at the same time a more definite approach was undertaken by the analysis group to implement an installation program once final selection of equipment had been made.

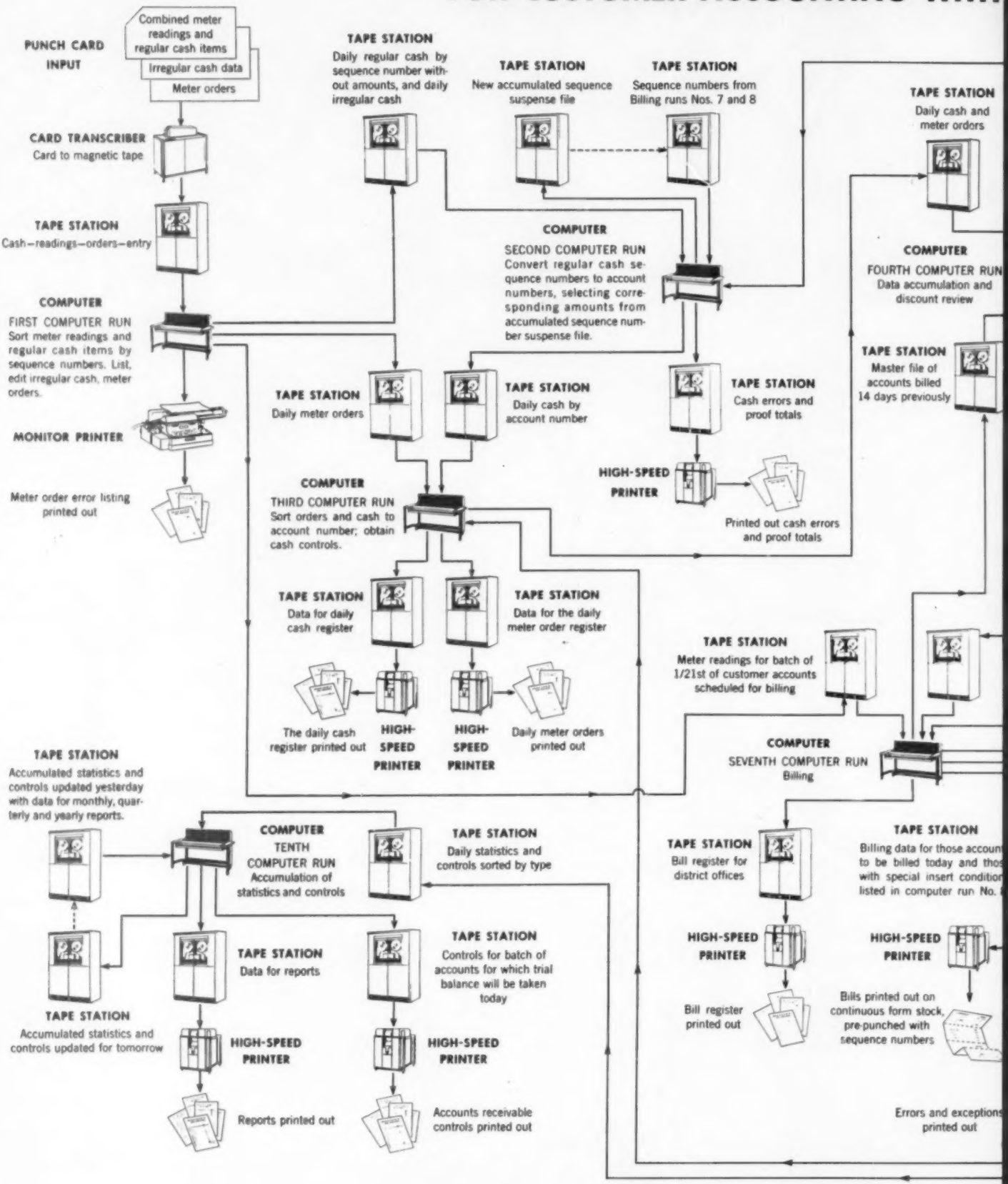
Meter reader makes his mark

On March 1, 1959, a lease agreement was signed with RCA for the 501 system, first of its kind to be used in the utility field. Niagara Mohawk plans to have the new system in action during the latter part of this year. The intervening period is being spent in the final stages of programming and testing preparatory to installation. The original analysis group has been expanded to 14, and in addition to completing the programming of the customer accounting application they're preparing other jobs for the system, including payroll, property records, stores records and engineering problems.

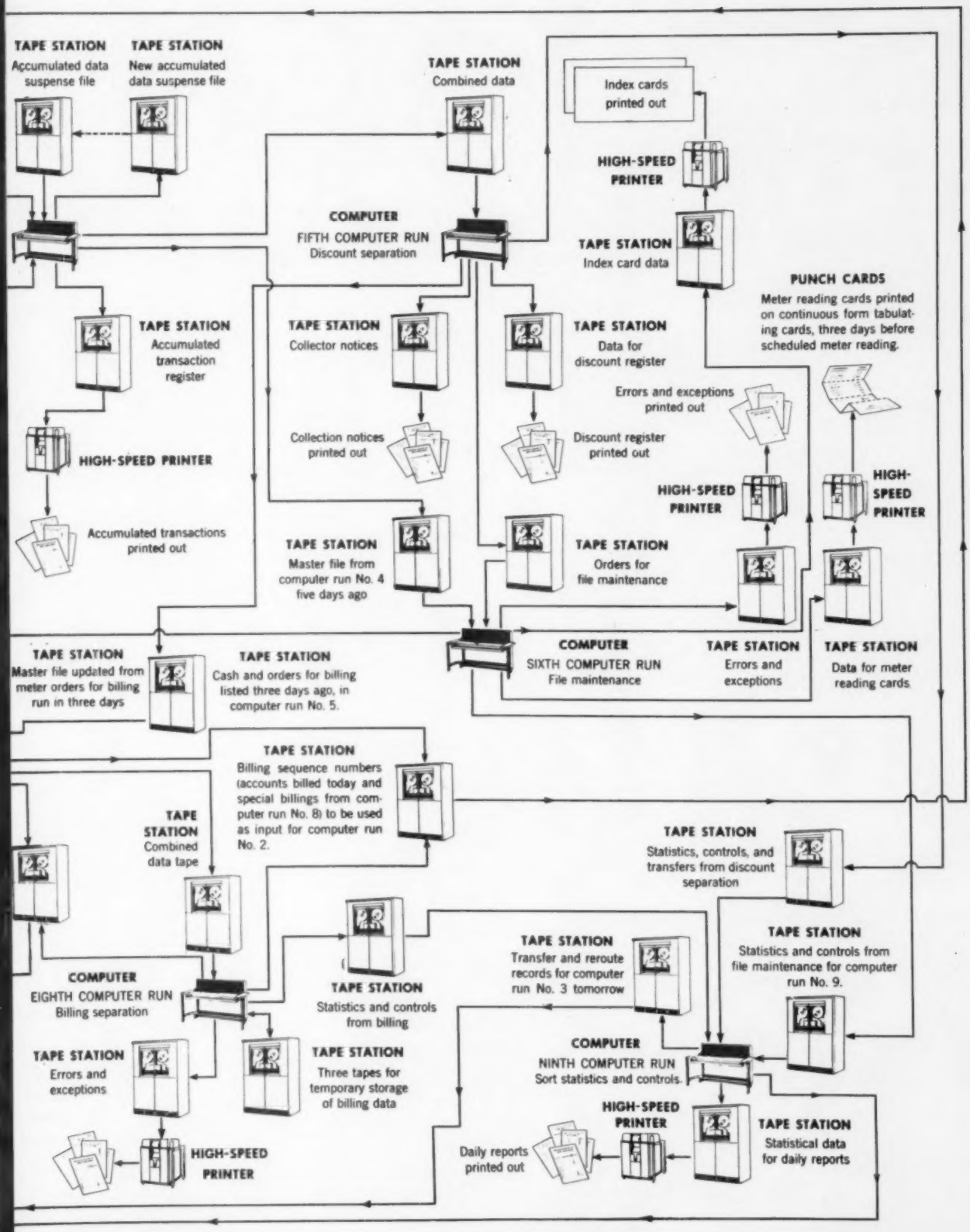
Although Niagara will utilize pre-punched mark-sensing meter reading cards and punched card "stub" bills, there will be no punched card output from the computer system. All print-out will be accomplished by magnetic tapes and high-speed printers.

The meter reading cards will be on continuous form tabulating card stock, two abreast, each card containing a pre-punched, pre-printed, consecutive "sequence" number. Three days prior to a scheduled meter reading day the sequence numbers in the first set of continuous forms are indexed in the computer, which then assigns sequence numbers serially to the magnetic tape. This already contains the required data for preparation of the printed meter reading cards. The sequence numbers printed from the tape are spot-checked against the pre-punched number as a double-check for accuracy prior to the distribution of the meter reading cards. (*continued on page* 18)

PLANNED CHARACTERISTICS OF NIAGARA FOR CUSTOMER ACCOUNTING WITH


PUNCH CARD INPUT
Combined meter readings and regular cash items
Irregular cash data
Meter orders
CARD TRANSCRIBER
Card to magnetic tape
TAPE STATION
Cash—readings—orders—entry
COMPUTER
FIRST COMPUTER RUN
Sort meter readings and regular cash items by sequence numbers. List, edit irregular cash, meter orders.
MONITOR PRINTER
Meter order error listing printed out
TAPE STATION
Daily regular cash by sequence number without amounts, and daily irregular cash
TAPE STATION
New accumulated sequence suspense file
TAPE STATION
Sequence numbers from Billing runs Nos. 7 and 8
COMPUTER
SECOND COMPUTER RUN
Convert regular cash sequence numbers to account numbers, selecting corresponding amounts from accumulated sequence number suspense file.
TAPE STATION
Daily cash and meter orders
COMPUTER
FOURTH COMPUTER RUN
Data accumulation and discount review
TAPE STATION
Master file of accounts billed 14 days previously
TAPE STATION
Daily meter orders
TAPE STATION
Daily cash by account number
TAPE STATION
Cash errors and proof totals
HIGH-SPEED PRINTER
Printed out cash errors and proof totals
COMPUTER
THIRD COMPUTER RUN
Sort orders and cash to account number; obtain cash controls.
TAPE STATION
Data for daily cash register
TAPE STATION
Data for the daily meter order register
The daily cash register printed out
HIGH-SPEED PRINTER
HIGH-SPEED PRINTER
Daily meter orders printed out
TAPE STATION
Meter readings for batch of 1/21st of customer accounts scheduled for billing
COMPUTER
SEVENTH COMPUTER RUN
Billing
TAPE STATION
Accumulated statistics and controls updated yesterday with data for monthly, quarterly and yearly reports.
COMPUTER
TENTH COMPUTER RUN
Accumulation of statistics and controls
TAPE STATION
Daily statistics and controls sorted by type
TAPE STATION
Bill register for district offices
TAPE STATION
Billing data for those accoun to be billed today and tho with special insert condition listed in computer run No.
TAPE STATION
Data for reports
TAPE STATION
Controls for batch of accounts for which trial balance will be taken today
HIGH-SPEED PRINTER
HIGH-SPEED PRINTER
Bill register printed out
HIGH-SPEED PRINTER
Bills printed out on continuous form stock, pre-punched with sequence numbers
TAPE STATION
Accumulated statistics and controls updated for tomorrow
HIGH-SPEED PRINTER
HIGH-SPEED PRINTER
Reports printed out
Accounts receivable controls printed out
Errors and exceptions printed out

MOHAWK SYSTEMS FLOW THE RCA 501 EDP SYSTEM



Following the meter reading operation, the cards are processed through a mark-sensing machine, which translates the markings to punched holes. All of the card information is then transferred to magnetic tape. The computer sorts the entries into sequence number order, preparing a new tape that will be used for customer billing.

The customer bills, also on continuous forms, are prepared in a similar fashion to the meter cards. The bills, punched cards with stub attachment, contain a pre-punched and pre-numbered serial number. As the bills are printed from one magnetic tape, a second tape is recording the number, total gross and net amount of the bill. This tape will be used for reconciling the cash payments in a later operation.

Three passes and out

The payment stubs are received in the various district offices where they are divided into two groups: (a.) regular payments, which represent payment in full or partial payments; and (b.) irregular transactions, consisting mainly of payments for which no stubs were submitted, or in which the stubs were mutilated. Each stub is mark-sensed to indicate the gross or net amount paid and in the case of partial payment, the amount is mark-sensed. From each group the stubs are then batched into units for manual balancing with the cash received. Each unit is then preceded with a "balancing" stub which is mark-sensed with the total cash of the unit.

"Let's face it George, it's bigger than both of us."

Upon receipt in the data processing center the regular payment stubs are processed through a mark-sense reproducing punch, which translates the marks into punches and creates a full sized tabulating card for each cash entry. Irregular stubs are manually keypunched. The cards are then converted to tape for computer entry.

Using sequence numbers for control, the computer automatically applies the correct cash payment to the open items on the tape prepared during the billing operation.

Some ten separate computer runs (see chart, page 16) will be required to handle the entire customer accounting system. A thorough analysis of the system requirements has resulted in programming that has sharply reduced the number of times that the master file would normally have to be passed through the computer system. The master file will be used only three times; (1) for billing, (2) for discount review, and (3) for file maintenance.

Niagara Mohawk's RCA 501 is a general-purpose system using transistor logic. Information can be introduced into the system from punched paper tape, magnetic tape and punched cards. The paper tape is one inch wide with a packing density of 10 characters per inch. Source document information may be punched on the off-line keyboard-operated Tapewriter and checked for accuracy on the off-line Tapewriter-Verifier. Printed copy is obtained simultaneously with the punching of tape on both pieces of equipment. Paper tape information is inserted into the system via the Computer Paper Tape Reader at approximately 1,000 characters per second.

Two bits for reading

Magnetic tape data enters the system directly from the tape stations. Each character is recorded on eight channels; six for information, one for parity, and one for timing. Each channel is recorded on two physically separated tracks, making a total of 16 tracks on magnetic tape. Each track is capable of producing a standard signal while reading. Thus, either one of the two recorded spots for a single bit of information may be missing, and the bit can still be read.

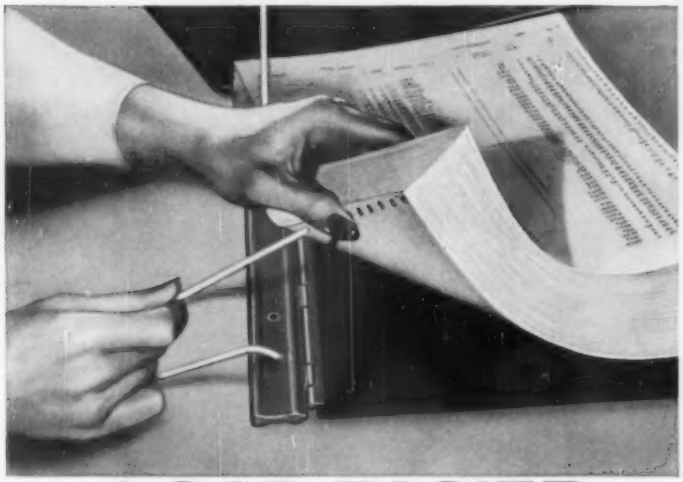
Punched card entry to the system is through a Card Transcriber that will transcribe data from 80 column punched cards to magnetic tape, using a separate tape station, at a speed of 400 cards per minute—which is an approximate rate of 33,333 characters per second.

Output from the system may appear as printed copy, magnetic tape or paper tape. The system has an Electro-Mechanical Printer, an off-line device that reads and prints data directly from a sep-

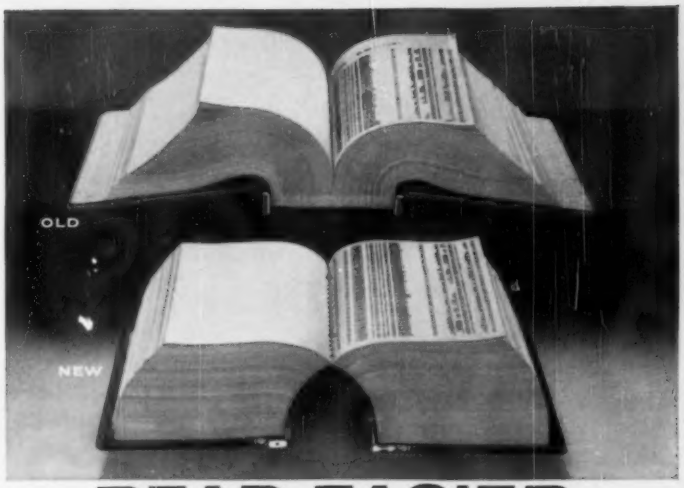
Continued on Page 32

GrayLine NYLON POST BINDERS

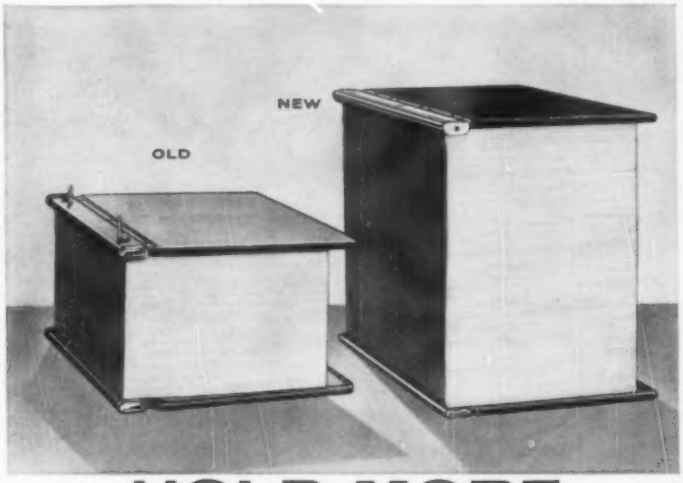
FOR BURST OR UNBURST TABULATING SHEETS



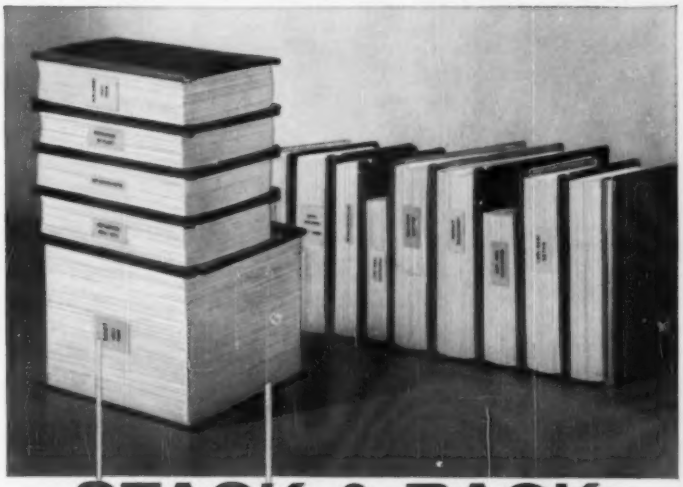
LOAD EASIER



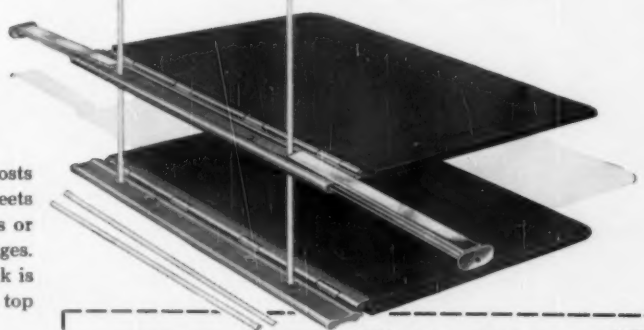
READ EASIER



HOLD MORE



STACK & RACK



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A New Role For the Systems Man

By John W. Haslett

SPECIALISTS in systems and procedures work are no longer the rare birds they once were. The last decade or so has produced the breed in quantity. Quality among the group has improved too, with the result of an almost universal use by American business of this type of practitioner. National organizations such as the Systems and Procedures Association, the American Management Association and the Society for the Advancement of Management have done a great deal toward post-graduate training of these men and women, many of whom have learned the ABC's of the trade on university campuses.

Industry itself has furnished a whetstone where skills of this sort have been further sharpened. Success of the systems people in furthering the effectiveness of management generally has shown that the "science" will be with us for some time, though the concepts have changed rapidly due to the impact of business automation.

But what of the specialists themselves? Are they prepared for a new role on the management team? Will they become the leaders in a search for more effective means of management, or will they remain as mere followers of the old concepts they themselves created?

Early in the growth of the systems function these men were called "analysts." An appellation thought to be most descriptive of the work they performed. This is no longer true. Analysis was, and still is, a part of the job, but a better description of their performance today is expressed by the word "synthesist." Putting ideas and operations together in systems and procedures work has become a much greater consequence than the simple analysis of the ingredients. Analysis, still important in doing the job through problem identification, has become a secondary skill. Synthesis, or solution simulation, is now the primary skill. Where once procedure specialists necessarily devoted themselves to surveys and analyses of segments of their companies, which resulted in the publication of general practice manuals for isolated procedures, the new trend is toward the synthesis of many related procedures into an integrated system for the company as a whole.

Ten or more years ago the charter for a typical systems and procedures department of a sizeable corporation read somewhat along the following lines.

Office Systems Program: Conduct surveys of procedures and organizational relationships, in terms of practicable extent of standardization, simplification, and production measurement.

Office Equipment Program: Conduct detailed studies and test makes and models of office machines and equipment for practical application, proper utilization and economical operation of equipment recommended. Establish basic requirements for the justification of purchase and for budgetary control purposes.

Records Management Program: Develop filing systems and standards for the effective management of records. Develop recommendations concerning the retention of records in accordance with prescribed company policies.

Office Appraisal Program: Follow up new methods installations and periodically review on a comparative basis the effectiveness of office systems, using data derived from the production measurement phase of the office systems program.

Forms and Reports Program: Establish a systematic means of correlating forms and reports with related administrative procedures and coordinate the dissemination of information concerning policies and procedures.

Coordinate forms within existing company requirements. Develop and maintain a system for review and clearance of forms for purposes of analysis and standardization prior to use. Coordinate standardization with the office systems program.

Coordinate recurring reports and statements.

John W. Haslett is manager of methods and procedures for the Shell Oil Co., one of the nation's largest users of data processing equipment. He has a long record of leadership in the systems field, having served as a vice president and national director of the Systems and Procedures Association. He has also conducted seminars on systems for the American Management Association and is the author of many papers on methods and management subjects.

Develop and maintain a system for review and clearance of recurring reports and statements initiated or requested, to avoid duplication and overlapping of data. Coordinate operations of the plan with the office systems program.

Coordinate publications. Develop and maintain a system for review and clearance of standardization of format and consistency of content, of manuals, instructions and other publications involving policies, procedures, organization, reports, statements or forms.

Relations—Research and Training Program: Establish and maintain relationships with professional management societies and with other companies for the mutual exchange of information relative to management improvements in policies, organization, procedures, equipment and methods development techniques.

Develop, by laboratory methods, systems applications to company problems and test the applications. Maintain file of data representing the most effective proven solutions to typical methods problems. Prepare training material on all phases of methods work for the systematic use of employes engaged in this field, and conduct regularly scheduled seminars in methods problems and techniques. Finally, coordinate activities with all other methods programs.

In earlier days these functions were appropriate and adequate for a systems group. The situation, generally, called for this type of service from full-time specialists. But at best they were merely filling a vacuum. Comparatively few companies at the time had marshalled their thoughts on how to improve clerical, accounting and administrative activities. Even simple mechanization of this type of work ws not general. Computers were regarded as scientific problem-solvers. The green eyeshade, celluloid cuffs and a roll-top desk had only recently gone out of clerical fashion in many organizations.

Had conditions not changed, there might not have been enough clerical help available in the country to process the paperwork which was soon to arise as a result of an expanded economy. This, then, was the vacuum. The systems and procedures specialist (he had wisely discarded the nondescriptive "efficiency expert" title which had fettered the acceptance of his talents for some years) recognized that a systematic approach to the problem was an obvious must. Then he rolled up his sleeves and went to work.

Fertile fields of economy

Where his predecessors, the "efficiency experts" had seemingly set their sights too low, with limited goals aimed too far down in their organizations, the newly energized systems man fortunately saw a broader horizon and set his sights accordingly. In the main he secured himself a responsible place in the company controller's office, where the need for his skill was almost immediately recognized. Here was spread out for all but the administratively blind to see, a most fertile field for economy in office operations.

Simple analysis and redesign of the most prolifically used business forms could save thousands of dollars. Rerouting of the same forms among clerical workers in a more logical way could add additional savings. Substituting simple mechanical equipment for the more dreary tasks could increase employes' job satisfaction and bring further economics. In this manner the systems man of the late 'forties and early 'fifties labored to earn his keep. The results of these labors were extremely profitable for the employers. And the systems man was certainly rewarded—at least temporarily—for successfully improving organization, methods, forms and their related areas. What few realized, however, was that the accomplishment of this function would lead to the systems man's extinction.

The analyst, in effect, was working himself out of a job!

True, many a systems and procedures department survives today on the old basis. To these

Integrated Data Processing at the Shell Oil Company

groups the spectre of diminishing returns, however, is always present. But many systems operations, recognizing that a change in basic course and technique was heralded, have veered from the past. New systems programs, new techniques were developed. Adaptations of other technologies were brought into use.

As far back as 1951, this author made the following observations in an article, published in the Systems and Procedures Quarterly, under the title: "Is the Modern Office Vanishing?".

Even as the present day office is surely vanishing, there are five pertinent predictions which may be made with a reasonable degree of certainty: (1) The place of the systems specialist on the management team will have become universally secure, provided the profession as a whole has done its job well.

(2) Emphasis in administrative management will be overwhelmingly placed upon the proper utilization of office equipment, since manual methods in office work will have gone the way of hand work in the plant, resulting in greater productivity and more jobs.

(3) There will be a new trend toward centralization of office operations because of the need for a concentration of large volumes of transactions to utilize rapid, but relatively expensive office machines.

(4) Machines will be developed to take care of the needs of small business as well as large.

(5) Paper work may be entirely eliminated. Instead of a piece of paper representing each business transaction, there may be substituted something like an electronic impulse, regardless of the distance between points of origin or reception.

The first four predictions have by and large come to pass. The last item, while technically feasible, is for the moment economically undesirable. Time will take care of that.

The occurrence of these changes and the present emphasis on integrated data processing and electronic computers has projected the former analyst into today's new role—that of the synthesist. One technology from which he has freely borrowed is operations research, another management science, which looks at parts of a problem in terms of the whole company. The systems man, using the team approach, as in operations research, has sought knowledgeable help in his

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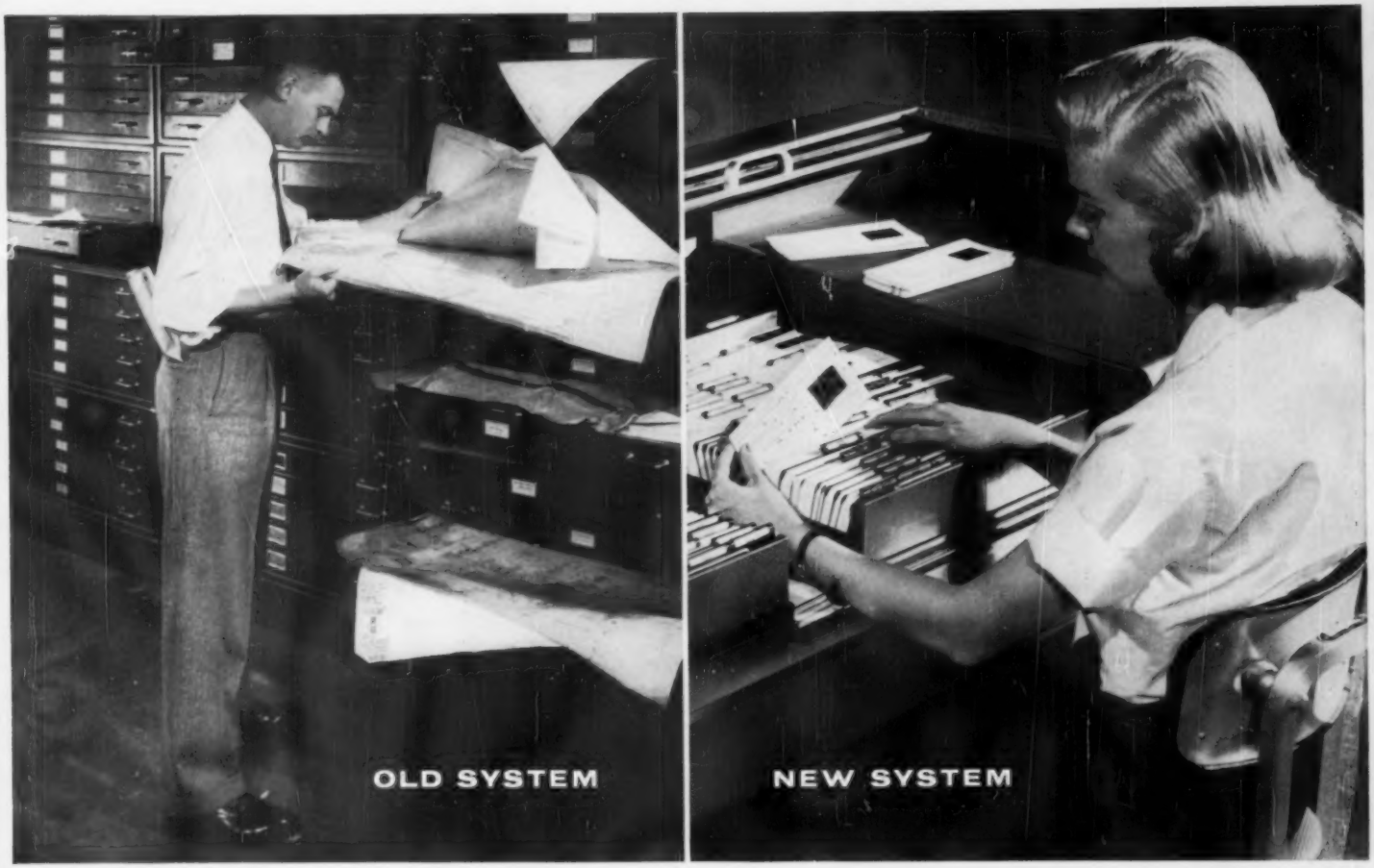
thanks to *automatic* xerography...



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A quick comparison of inventory report produced by data processing with a physical check of pipe inventory proves accuracy of system to executives of L. B. Foster Co. Shown here, left to right, are B. S. Mars, vice president and general manager of Pittsburgh branch operations; Donald Middleton, branch sales manager, and Robert Crawford, branch manager of pipe sales.

Market Managing by Data Processing

SYSTEMATIC processing of all sales data into a series of vital reports has given the L. B. Foster Co., steel product suppliers, an exact method of managing its entire marketing operation.

To say that management knows to the last dollar exactly what is happening to sales and profits for each branch office, each product, in each state, in each market, for each customer and salesman is no exaggeration.

The company has developed a simple but comprehensive system of collecting and processing all data pertinent to the sales operation and feeding this information back to management in detail and summary form. The result is a flow of up-to-the-minute reports on the status of all operations, which provide management with a sound basis for evaluating performance and potential.

The system was originally conceived as a means of reducing accounting department paperwork, but investigation revealed that it would be highly effective in producing much needed operational information. Today the company considers the value of the reports on sales and profit performance as the major achievement of data processing. Lower cost of accounting, the original goal, is incidental.

Foster makes use of this information in sales supervision, market planning (including advertising), product development, inventory control and cash utilization. There is no major or minor decision made without taking the report data into account.

Blackout of the profit picture

As one of the nation's largest suppliers of steel products, L. B. Foster Co. has always been sales oriented. The company had, prior to 1955, built a dollar volume in business reaching eight figures by warehousing rail and track accessories, sheet piling and other steel products for heavy construction and highway building as well as pipe, valves and fittings. This was accomplished through a thorough knowledge of the fields in which it operated and efficient service to its customers.

In 1955 the company made plans for a rapid expansion. This project, now about 30 percent completed, called for 24 resident salesmen and six local warehouses to supplement six main branch

offices and warehouses. It also undertook a diversification program, moving into fabrication of highway products and broadening its line of rail and track accessories.

During this same year, Foster enjoyed a 48 percent increase in sales, and management found it was getting difficult to evaluate operations on the available data. No formal, current figures could be had except total sales for each branch office. Sales in the three major product lines and the over-all profit picture were known only after the accounting department had prepared six-month and annual statement, 60 to 90 days later.

In an attempt to remedy this problem in the accounting department, Foster began to investigate automatic data processing systems. As a result of this search, the company found another answer, a method of evaluating and gauging sales and market performance.

In the four years following 1955, sales zoomed 250 percent, and the number of salesmen and headquarters executives increased 100 percent. Yet the total number of other salaried employes increased only 39 percent, a tribute to the accomplishments of data processing.

Foster leases standard punched card equipment from IBM for about $2,000 a month. With the equipment on hand, every essential business transaction can be put "on tab," and the reports prepared in detail or summary form as deemed necessary. The basic raw material for the reports consists of punched cards made up from each line item of invoices and vouchers. When these cards were designed, the company also redesigned its order forms, invoices, purchase orders and the other paper necessary to complete a transaction.

Although Foster has not determined all the uses to which automatic data processing can be put, codes covering all available data have been set up to permit an orderly expansion of the program.

A forgotten fact of life

Because of its requirements, Foster's data processing activities differ in techniques from others, in that all items for certain reports are first printed in full. These "encyclopedic" or detailed reports are complete rather than in summary form and they perform a major service.

One such report is the first sales and gross profit picture, printed before the eighth of each month to cover the previous month's operations. This is made by simply sorting and collating punched cards representing every invoice item for the previous month by office and product category.

This same information is subsequently summarized by branch office and the dozen major product classifications to give management a quicker recap of current operations.

The encyclopedic report, however, is most use-

Top management gives monthly reports a thorough review. Left to right are A. M. Norman, treasurer; B. L. Foster, president, and Milton Porter, vice president and product manager—tubular products.

Machine panels are wired for multiple jobs, making it easy to change over from one report to another in the course of a day's operation.

ful to branch managers and their sales managers. When summary reports show questionable information, the more complete report will usually reveal the answer.

These encyclopedic reports, in the estimation of Foster management, highlight an often forgotten fact of business life; every transaction affects profit.

Information from these reports, for example, points up the number of shipments of stock from one office or warehouse to another because the latter is out of an item. The report can act as a guide to better inventory control for the best service at the lowest cost. In another example, there is a continuing check on billing and accounting procedures. Variances in profit can be often traced to errors in shipping methods and billing procedures, and these can be quickly rectified.

In another vein, there are two important reports delivered which analyze Foster's potential markets. One of these indicates sales by states and the other by 43 customer classifications. Both help the company in planning its sales force expansion. Figures are compared with various indexes and marketing figures for the areas and industries involved to determine where sales and advertising efforts will have the greatest payoff.

In the five years between 1954 and 1959, Foster more than doubled its sales force. The reports played a major role in showing the potential that could be realized by this expansion and where the new men could be used most profitably.

One of the more concise efforts to pinpoint markets involved industrial use of structural pipe in fabrication. For this analysis, Foster used the Iron Age (magazine) metalworking market survey which, in punched-card form, lists every metalworking plant in the country, giving size and type of products made.

By converting the Iron Age codes to its own industrial codes, Foster knows exactly where its untapped market is by area, type of manufacturing and even by plant name.

Trouble in Ohio

One result of this information was a discovery that the company was selling only half as much of one item in Ohio as it should have been, based on sales in neighboring western Pennsylvania. A resident sales office and new local warehouse scheduled for Cleveland were established ahead of time, and this move accomplished the looked-for improvement in sales on this one item plus very successful results in other lines.

Continued on Page 33

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And the Stromberg TRANSACTER System is *durable*–of compact, modular construction, quality engineered for heavy, continuing use in any production environment.

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For More ... Circle Reader Service Card No. 2-65

Check and Compare these TRANSACTER System Advantages:

ACCURACY

ERROR PREVENTION

- Correct number and combination of data cards and dials are required before transmission is possible.
- *Visual* verification of variable information before and after each transaction.
- Data dials reset *automatically* to zero, by card removal after each transmission.

ERROR DETECTION

- Automatic checking of pulse length and timing; message length and character composition. Automatic re-transmission is available.

SPEED

- Reading, transmission and recording at 60 characters per second.
- System speed is not affected by operator limitations.
- Queuing drastically reduced by requiring correct message composition before entering communications network.
- Central unit *simultaneously* accepts message and selects next transmitter. No lost time in switching.

VERSATILITY

- Accepts up to five prepunched card combinations . . . varying sizes . . . paper or plastic. Eliminates unwieldy master files.
- Permits variable messages—up to 150 characters in length.
- Input code can be converted to *any* communications system or computing code.
- Provides wide variety of time, date and shift codes, i.e., hour of year, M day code or any conventional mode.
- Plugboard flexibility throughout.
- Up to 36 input stations can be connected to one compiling station.
- Contains complete, fully-synchronized time system.
- Of fully modular construction —facilitates maintenance, allows virtually 100% availability factor.

Forms Design Plays Key Role In IDP System

Warren Kennedy, assistant controller at Tennessee Products, is the man behind the new integrated system and forms control program.

ADOPTION of an integrated data processing system in two troublesome areas of paperwork—order-entry invoicing and traffic control —substantially reduced costs and increased efficiency on a company-wide basis for the Tennessee Products & Chemical Corp. in Nashville, Tenn.

Designing forms to be compatible with the system played a major role in the change-over. In the case of order-entry invoicing, it meant a leap from a near 100 percent manual operation to a largely automatic system utilizing eight-channel punched paper tape, new forms and Friden Flexowriters.

In traffic control, new forms provided information on incoming, in-transit, placed and released railroad freight cars, which meant the company could keep tabs on the movements of these cars and take action to keep demurrage charges at a minimum.

In tackling the problems, Warren Kennedy, assistant controller, and his associates recognized that order-entry and subsequent operations were complicated due to the nature of the company's business.

Tennessee Products & Chemical is a subsidiary of Merritt-Chapman & Scott Corp. and is a producer of chemicals, metallurgical products, fuels and building materials. Within these categories there is a great diversification of products and markets, and the company operates 11 installations located in Tennessee, Florida and Texas.

In addition to the problems of diversified products, Tennessee Products also had to contend with a sliding price scale, discounts varying with the trade area, freight equalization, commissions, sales taxes and other factors. Calculations and invoice totaling were inherently complicated procedures.

Before the IDP system was installed, it took the department a day to manually type approximately 50 orders and invoices. With volume on the increase, it became apparent that either the present staff would go on overtime or additional help and equipment would have to be brought in. The above measures would only be stop gap, however, since manual preparation of paperwork meant that every time any customer ordered, all information on the order had to be typed a minimum of two times.

In a search for a solution to the problem, an analysis of factors governing operations revealed between 500 and 600 customers who were regularly and actively ordering approximately the same items. Only the quantities changed in a majority of the cases indicated. Working with representatives of the Standard Register Co. to devise new forms, Kennedy and his associates developed a system which can handle three types of orders—from existing customers for their normal products, from existing customers for products not previously ordered, and from new customers.

In the first case, a file has been prepared which contains a master specification card, previous orders and a punched tape with constant information encoded. When the order comes in, this file

Using tape obtained as a by-product of the order-entry operations, an operator can prepare five-part, continuous-form invoice sets as soon as a notice of shipment is received.

is pulled and sent along with the order to sales for checking.

The master specification card is a one-part Standard Register continuous form which provides space for all constant information such as customer number, location, sold to, ship to, routes and rates, f.o.b point, terms, special instructions, shipping instructions and product specifications. This same information is coded on the punched tape at the time that the master card is prepared.

Nine parts and action

After the file and order are approved by sales checkers, it is given to a Flexowriter operator for preparation of a sales memo. The sales memo is a nine-part marginally punched continuous form which initiates the production of the materials ordered as well as the billing and subsequent invoicing. The operator inserts the master tape in the Flexowriter reader and automatically prepares the major part of the order form, adding manually only the variable data required to complete the memo—quantities, date, and customer order number. At the same time a by-product tape is punched which contains all the information now entered on the sales memo.

As soon as the manually typed entries are checked, the memo copies are distributed. Part one is an acknowledgement copy for the customer; part two goes to accounting along with the by-product tape for subsequent invoicing; part three goes to the sales department; part four and five go to the producing plant involved along with part six, the quality control copy; part seven is the salesman's copy; part eight goes to traffic, and part nine serves as a utility copy for anyone who might wish to review incoming orders.

These copies play other roles in the system as well. For example, the salesman's copy, before it is sent to him, is used to prepare punched cards for gathering statistical data on sales and products.

When the notice of shipment has been received, the accounting copy and tape are pulled and prices and extensions calculated along with the addition of miscellaneous charges.

After totaling, the copy and tape are sent to the billing operator who uses a Programatic Flexowriter to prepare the invoice. The tape is used to

produce the constant data, and as before, the operator manually types the numerical information for billing. The form used here is a five-part, continuous, marginally-punched form with three invoice copies for the customer and two for accounting. If additional copies are requested by the customer, single carbonized copies are inserted into the set.

A change of habit

Every time a customer changes his ordering habits or a new customer places an order, a new master specification card and tape must be prepared. The new file is sent to sales for checking and then to the credit department for approval. After an OK, the file is sent to traffic control where routes and rates are verified along with the bill of lading description and the type of railroad car to be used for shipment. If there are any changes necessary in any of these departments, the files are sent back for re-preparation. The tape can be put to use here, setting all information automatically except for the corrections.

Bills of lading, which once presented a problem to the company, have been redesigned. Previously, different bills of lading were used for each plant since each plant produced different material, and the chemical analysis of these products differed. This information was required on the bill of lading for rating.

Now one Zipset form, designed to meet special requirements, is used for all plants. Included in its design are spaces to indicate the chemical analysis of the products shipped, no matter what kind or from what plant. These forms offer the normal number of copies necessary plus those for accounting, traffic, sales and file—eight in all.

Confusion and traffic

Kennedy stated that the procedures now in operation have speeded up billing to a considerable extent and have also provided efficiency and a new simplicity at the same time. The error factor has been reduced by eliminating repetitive typing of basic information, and the productive capacity of the staff has been increased nearly 100 percent, eliminating the need for overtime or more people.

The second paperwork area improved by new forms design was in traffic control. The company was being hit by large demurrage charges on freight cars it didn't know were subject to such charges, and it was keeping some cars longer than necessary, allowing charges on those to get out of line.

It took only two new forms to bring the problem under control. The forms are both six-part Zipsets, providing copies for the yard master, traffic, operations, plant superintendent, inventory and the general file.

The first new form is an Incoming and In-Transit Car Report, made daily by the receiving department. As soon as notice of shipment or a bill of lading is received from a supplier, the car carrying the shipment is entered on this form as an in-transit car. It is then carried as in-transit until it is delivered to Tennessee Products or until the company is notified that the car has been placed.

The form provides space for: Car initial and number, contents, shipper, date shipped, time of arrival, date and time constructively-placed, date and time constructively-released, and date and time actually-placed. All in-transit cars are grouped at the top of the form, constructively-placed cars are in the middle, and incoming cars are reported at the bottom.

The day a car is received, it is shown as an incoming car, and all cars received or constructively-placed are listed. This includes empties to be loaded as well as incoming loads. If a car is actually-placed first, the constructively-placed and released columns are skipped and it is carried in the "Actually Placed" column. All cars are carried on this form until they reach this position.

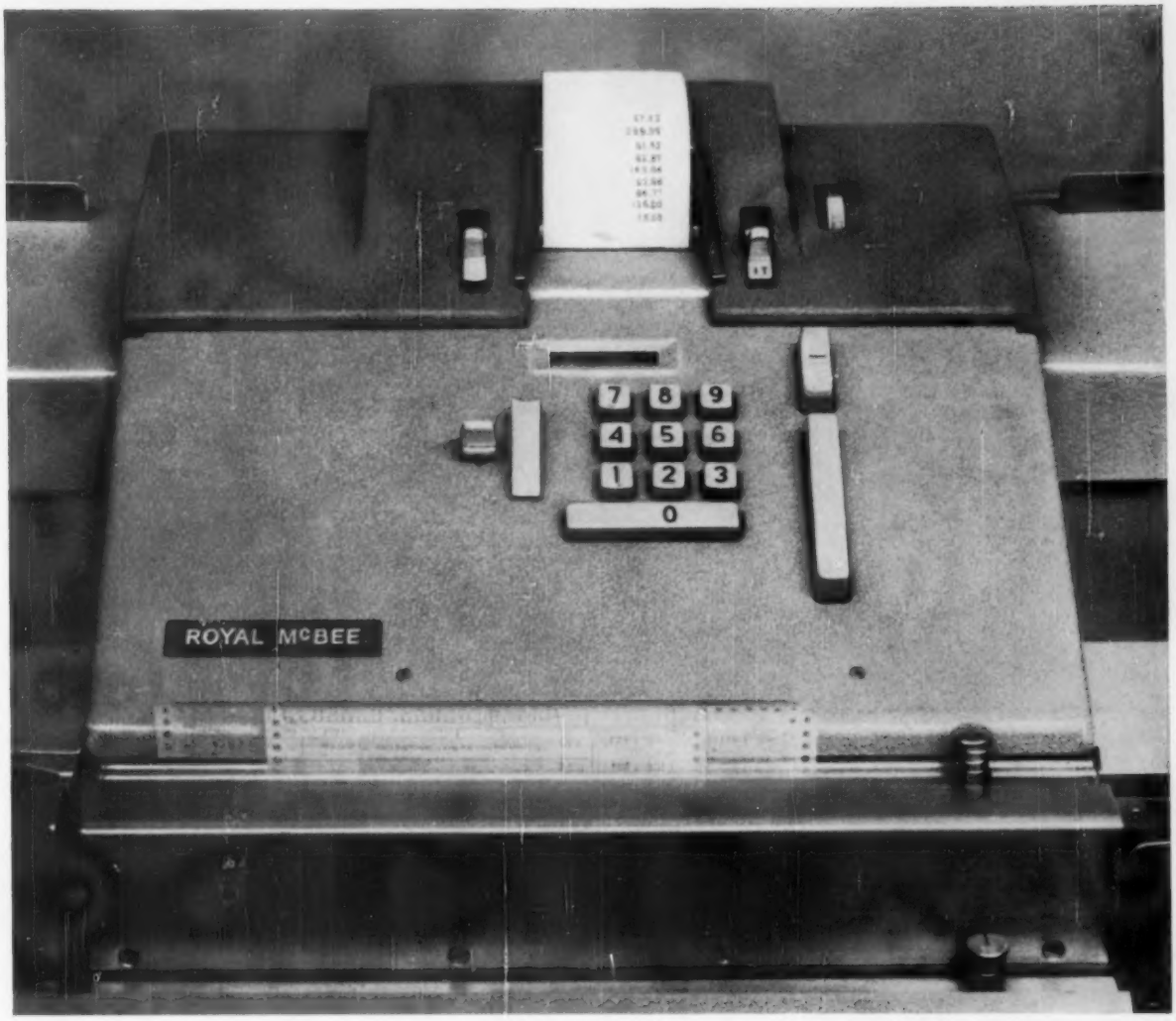
All eyes on the track

The second form is a Daily Railroad Car Status Report. This is filled out by using the previous day's in-transit report and the yardmaster's card as source documents. Each card on the company's property which has been reported as incoming is listed and carried continuously until it passes into the out-bound-cars-on-hand and outgoing-cars category. All cars, whether waiting to be loaded or unloaded, are included.

The form provides columns on the top half for entering cars-on-hand data—car initial and number, contents, date and time received and time demurrage begins. In the lower half, outbound cars are listed with initial and number, contents, consignee, date and time received, date and time released, days on hand, debits, credits, and debits over four. On the day a car is released, it is listed as outbound, whether it is empty or loaded.

With this type of control, the company has gone a long way in preventing demurrage by keeping an eye on the cars before the charges begin. Every car is watched and recorded from the time it is listed as in-transit to the time it is released.

In all areas where Tennessee Products sought to improve its paperwork procedures, the combination of automatic data processing equipment, such as the Flexowriters, and the use of carefully devised forms proved a most effective weapon in cutting costs and increasing efficiency. ■



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...at the heart of Automatic Keysort Data Processing

What you see here is the Keysort Tabulating Punch – the only complete punched-card processing machine in the business world. It is the only machine you require to automatically tabulate vital figure-facts on every phase of operation for fast, accurate management reports. No special training is required for operation, and the machine imposes no restrictions on present accounting procedures. Rental is less than $100 a month. Your nearby Royal McBee Data Processing Representative will be happy to arrange a demonstration. For complete information, call him or write Royal McBee Corporation, Data Processing Division, Port Chester, N.Y. for brochure G-39.

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NEW CONCEPTS IN PRACTICAL OFFICE AUTOMATION

For More Information Circle Reader Service Card No. 2-66

Niagara Mohawk Continued from page 18

Some of the basic units which are to be used in Niagara Mohawk's RCA 501 EDP system.

Clifton J. Williams, manager of electronic data processing at Niagara Mohawk, is the man responsible for the installation of the EDP system.

arate tape station. Print-out may be up to 120 characters per line at 600 lines per minute, for single spaced copy. The paper shifting rate is at least 50 lines per second when spacing more than three lines. The printer rearranges and prints data according to the format prescribed by a plugboard and a control tape loop.

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A Monitor-Printer, an on-line device similar to a typewriter, prints information on a hard-copy, directly from the computer, at a speed of approximately ten characters a second. A paper tape punch is associated with the monitor printer, which will punch data simultaneously with the printing operation.

The man responsible for the entire EDP system is Clifton J. Williams, manager of electronic data processing for Niagara Mohawk. Mr. Williams has spent 32 years in accounting work for the company, having served as assistant customer accounting manager, Utica district office manager and assistant methods supervisor. He assumed his present position of EDP manager in 1957.

Service with a forward look

According to Williams, the entire customer accounting run will require about nine-and-a-half hours daily. This will include an average of 40,000 separate cash payments received daily, approximately 2,000 meter orders per day, and about 65,000 meter readings entered and billed.

All told, the new system will bring about the automation of the customer accounting operations for Mohawk's 43 district offices, an accomplishment that is expected to result in many benefits. One gain, and a major one, will be the economics effected by use of the one RCA 501, instead of the three tabulating machine systems now used in divisional offices. As Mr. Williams sums it up, "Niagara Mohawk looks upon the '501' as an important item in its forward looking, modern approach in expanding the economy of the area it serves, and in its constant search for new and better methods in serving its customers." ■

Market Managing

Continued from page 26

This pinpointing of the market paid off extremely well in 1958 when there was an over-all decline in the sales of industries served by Foster. Despite this down trend, the company sales actually increased in 21 states. The reason was a greater effort in sales in states where Foster had not been getting its normal share of the market. This fact convinced management that marketing programs designed to contribute to the company's growth should be continued regardless of general economic conditions. It meant continued planning based on the whole market picture, rather than simply on experience.

Closing the customer's gap

Foster also uses its punched-card system to evaluate its results with customers. A quarterly report is made up for each customer, detailing his purchases. The missed business from each one is very evident by examination of the gaps in orders. Salesmen can learn quickly where to spend more time developing new business with each customer.

Two summary sales and gross profit reports are developed for use by management. The first is a quick recap that is valuable in evaluating current business operations in general, rather than in managing marketing operations. In addition to the previous month, it gives figures for the year to date and comparative figures for the previous year.

The second summary sales and gross profit report provides a summary of 93 major products. Since product mix is considered highly important to Foster's profit picture, this report tells the company where to concentrate sales and advertising efforts by pinpointing weak and strong spots. It also plays a role in predicting inventory needs.

The first several months that this report was issued clearly established that the company was making no money on one item in its structural pipe line. With an aggressive sales and advertising effort to show the advantage of the product, even at the slightly higher price, Foster maintained volume while getting profits back in line. Without data processing, the discrepancy would have continued indefinitely.

Still another report breaks down sales to all types and sizes. This is used to establish inventory levels. Since over-all stocks average 100,000 tons with literally thousands of lots scattered in dozens of locations, this report is an extremely important contribution—made possible by automatic data processing. It is released on a quarterly basis to correspond with Foster's four-times-a-year inventory turnover goal. The report, plus management interpretation to take into account seasonal and economic forecasting factors, can evaluate inventory control performance.

Foster also controls its fabrication contract work by information gained through data processing. Each month the charges against each job in process is entered on cards and analyzed. This helps to manage current jobs and provides a more factual base for future bidding.

Finally, the company uses its data processing system to control expenses as closely as it supervises sales. Again, a series of reports are printed —the first detailing items fully and subsequent reports summarizing them for management perusal. For close control over operations, every item —even the cost of preparing each report—is detailed in the encyclopedic report and included in the summaries.

In addition to perpetual inventory maintained by headquarters analysis of sales and purchases, stock lists are made up monthly for each item that Foster handles. The system for preparing this report is entirely separate from other data processing operations. Each month a tabular listing of all products by type and size is sent to warehouse managers who enter quantity of each from warehouse records. These records are then printed at headquarters and distributed to all offices. The primary purpose of this report is to let all offices know what the others have in stock.

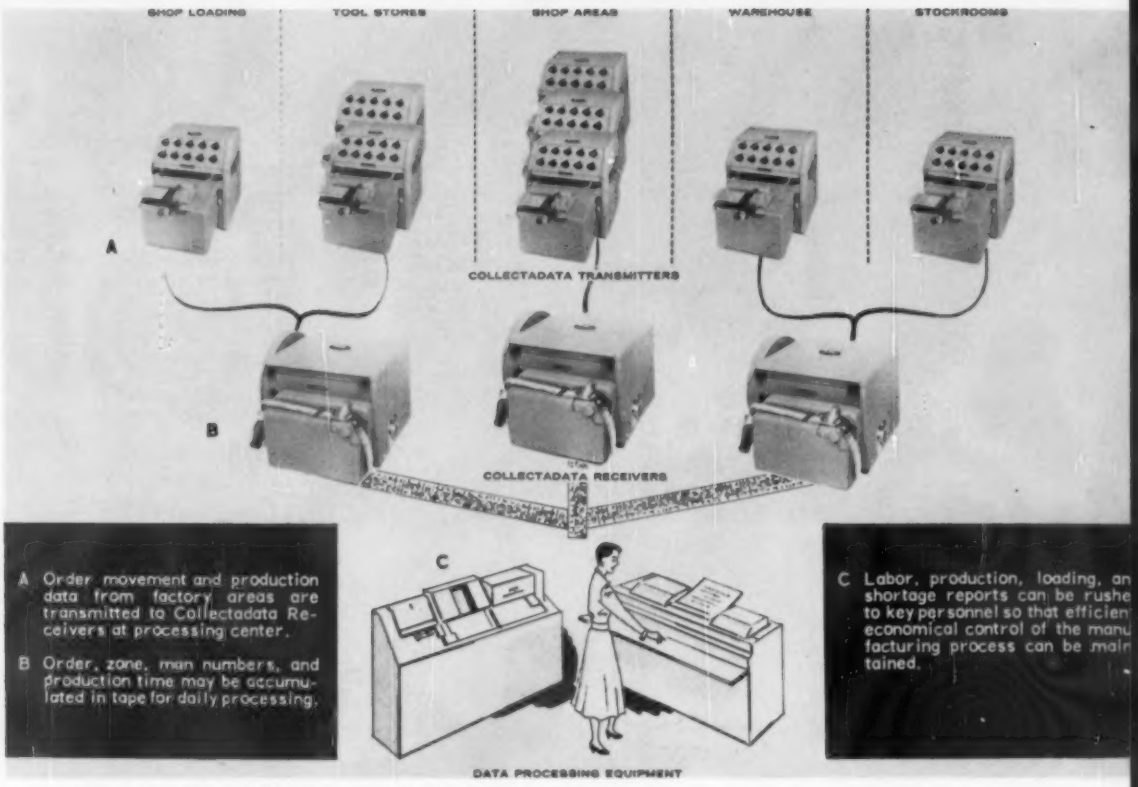
Headquarters gets the picture

Another supplementary report totals tonnage moved into and out of each warehouse (invoices and vouchers include weight which is coded on the punched cards). These figures help warehouse managers determine employment requirements and have, in some cases, prompted management to change handling techniques.

Because of data processing, L. B. Foster Co. has maintained its essential character as a closely knit, fast moving sales company. Both regional and headquarters offices are still close to markets and customers. The company tells its salesmen where the customers are, and the salesmen are then on their own.

The greatest advantage of the system, from the company's point of view, is that it has enabled growth without changing basic methods of operation. Headquarters knows what is happening in the field, but branch offices retain a considerable autonomy.

Data processing has freed the sales force from burdensome paperwork, yet it has supplied the field men with invaluable information while giving headquarters a concise and complete picture of all operations. ■


SHOP LOADING
TOOL STORES
SHOP AREAS
WAREHOUSE
STOCKROOMS
A
COLLECTADATA TRANSMITTERS
B
COLLECTADATA RECEIVERS
A Order movement and production data from factory areas are transmitted to Collectadata Receivers at processing center.
B Order, zone, man numbers, and production time may be accumulated in tape for daily processing.
C
C Labor, production, loading, and shortage reports can be rushed to key personnel so that efficient economical control of the manufacturing process can be maintained.
DATA PROCESSING EQUIPMENT

A graphic explanation of "Collectadata" equipment in action.

Friden Produces 'Collectadata' System

An MBA Product Preview

A SYSTEM of readers and punches, designed to collect data from several points of origin and channel it to a central processing point has been introduced by Friden, Inc. under the name of "Collectadata."

The Collectadata system is capable of accumulating up-to-the-minute records each day of every factory job as it progresses from start-work to shipping and transmitting this data to the front office for data processing.

An input document—tape, edge card, tab card, or form card—can be coded by combinations of punched holes to designate order number, part number and quantity. This form accompanies a production order through each step of the manufacturing process. As work is started or completed, a card or tape with coded information covering the job is inserted in a Collectadata transmitter where it is automatically read. The system can also transmit numeric information with each transmission by means of manually controlled dials.

All variable and constant input is then channeled by cable to a data collecting center where it is reproduced in a continuous punched tape on a receiver. This tape can be fed to a computer, a tape-to-card converter, or a Friden Flexowriter to prepare documents used for scheduling, job priorities, anticipated shortages, shop loan conditions, backlogs, and other reporting functions. The information may also be used for production time recording in cost accounting and labor reporting. The receiver can be connected to a time code emitter which will read out a time indication automatically with each transmission.

The system offers the advantage of less paperwork chores in the factory area, especially limiting the amount of handwritten reporting in the shop. There is no problem involved in operating the system at the transmitter since it is said to be impossible to transmit if a card is inserted incorrectly.

Manufacturing control, production time control and billing are possible with Collectadata. Suggested areas of business applications include transportation, retailing and wholesaling, research and finance. End products may be engineering computations, order backlogs, sales statistics, product test results, warehousing data, purchasing and policy information. Circle No. 2-15

Another way RCA serves business through electronics
In selecting an electronic data processing system, we primarily sought one that would allow updating of policy status on a daily basis. We wanted all information on one master tape from which would come the many outputs of billing, accounting and statistics. Furthermore, the system had to provide economy in initial outlay, along with the capability for gradual expansion to meet our growth without reorganization of equipment.
The RCA 501 answers each of these needs.
MORRIS G. FULLER, President
STATE FARM
INSURANCE

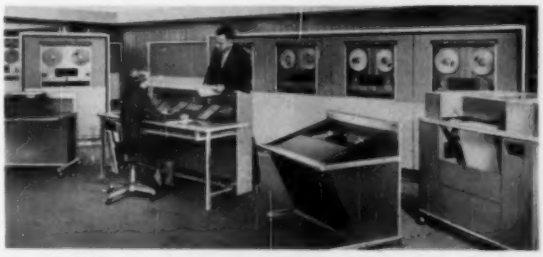
"Our RCA 501 will cut lag-time on month-end statements from three weeks to three days."

With its efficient, high-speed operation, the RCA 501 Electronic Data Processing System will eliminate the many cards and card files currently in use, provide complete record storage on tape, and give "up-to-the-minute" data for management in all phases of the company's activity.

Lag-time on progress reports will be cut from three weeks to three days. Agents' consolidated statements will be ready for mailing two days after the closing hour for each of the company's 16 Regional Head Offices. A comprehensive review of every policy will be accomplished every day in less than a three-hour period.

The initial installation can handle double the present volume of storage and data processing. The "building block" design of the system will permit another doubling, up to four times the present requirements, with only minor increases in equipment and rental costs.

See the RCA 501 in action at the RCA Electronic Data Processing Center at Cherry Hill (near Camden), New Jersey.



At the world's most modern Electronic Data Processing Center in the RCA-Cherry Hill plant near Camden, N.J., the RCA 501 may be seen in full-scale operation serving business, industry and government.

RCA 501
ELECTRONIC DATA PROCESSING SYSTEM

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RADIO CORPORATION of AMERICA

ELECTRONIC DATA PROCESSING SYSTEM • CAMDEN 2, NEW JERSEY

For More Information Circle Reader Service Card No. 2-47

An MBA Product Preview

The new Dashew "Printapunch"

'Printapunch' Combines Card Punching with Source Writing

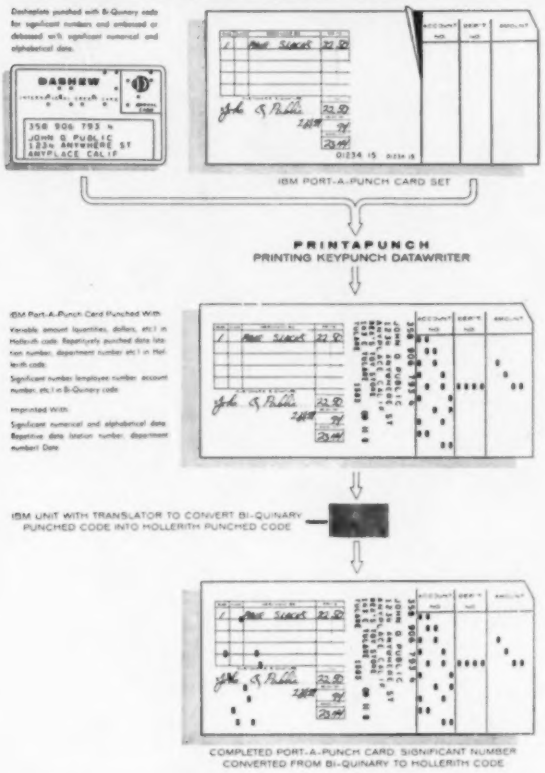
DASHEW Business Machines, Inc. has announced the "Printapunch," a new, low-cost machine designed specifically for capturing source data at the point of origin. The Printapunch, working with the same speed and simplicity as the current credit card imprinters, will keypunch a card directly from embossed plastic or metal plates, combining the writing and punching operations into one.

The plates are identical in size and weight with the popular plastic credit cards, but they contain a series of holes in an otherwise unused area which act as a template for punching the information into an IBM card. The code holes are created automatically as part of the standard embossing operation.

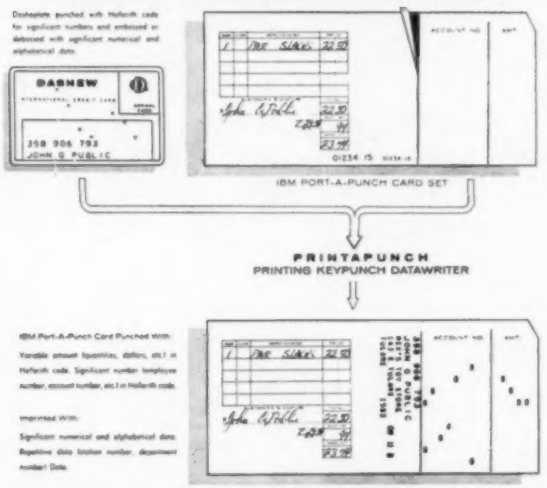
The Printapunch will have a wide variety of data processing applications, including inventory control, payroll accounting, credit card sales, tool control, bank loan accounts and hospital patient record-keeping. Embossed data, such as account number, or name and address, can be imprinted from the identification plate, while other data is imprinted from optional fixed plates. Dates can be imprinted from a stylus-set dater, and variable data can be added by setting adjustable levers. Standard IBM punching of the desired information is simultaneous with the printing. An optional binary code system, devised by Dashew engineers, will triple the data capacity of each card column.

The Printapunch, which incorporates the IBM "Portapunch" is 11 inches long, 6½ inches wide and 11 inches high. It weighs about 20 lbs. and will sell from $75 to $150, depending on quantities ordered. Circle No. 2-14

BI-QUINARY CODED SIGNIFICANT NUMBERS


IBM PORT-A-PUNCH CARD SET
PRINTAPUNCH
PRINTING KEYPUNCH DATAWRITER
IBM UNIT WITH TRANSLATOR TO CONVERT BI-QUINARY PUNCHED CODE INTO HOLLERITH PUNCHED CODE
COMPLETED PORT-A-PUNCH CARD SIGNIFICANT NUMBER CONVERTED FROM BI-QUINARY TO HOLLERITH CODE

HOLLERITH CODED SIGNIFICANT NUMBERS



The chart above shows how the new system operates with either the bi-quinary coded significant numbers or the Hollerith Coded Significant numbers

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An MBA News Feature

Squaw Valley To the World In Three Minutes

By William Christian

William H. Wilson, right, vice president of Addressograph Multigraph Corp., shows Robert DiGiorgio, executive vice president of the Organizing Committee for the Olympic Winter Games, just how scoring will be reported.

A FRENCH and English-speaking computer, teamed with electronic timing equipment, calculators, automatic copying and printing devices and high-speed communication facilities will make history at the 1960 Olympic Winter Games in Squaw Valley, Calif., this month.

For the first time in any sports event, timing, scoring and calculations will be determined by the techniques and equipment involved in automatic data processing. Using the same ADP methods employed daily in American business, this system will keep the world informed of the scores and other vital information, concerning the 26 major events, minutes after the results are official.

Laborious hours of manual calculation and hand-written—and rewritten—results will be reduced to instantaneous calculations by an IBM RAMAC 305 computer.

The system will also include: Longines-Wittnauer Watch Co.'s electronic timing devices; Addressograph-Multigraph Multilith machines; copying process equipment from Haloid Xerox Inc.; calculators, adding machines and electric typewriters from Olivetti Corp.; Radio Corp. of America's communication equipment; electronic transcribing units from Tel Autograph Co.; and time-figuring machines from the Victor Adding Machine Co.

Automation at the Olympics will be organized to score many different events simultaneously, whether they are speed or figure skating, hockey, slaloms, downhill, cross country or ski jumping events. In addition to actual computation, the data processing system will be ready with instant current biographical information on all contestants, updating it with each practice run and contest.

A pre-punched card has been prepared for each contestant, with his name, the event, his number and country represented. These are placed in order of competition, and will run through the computer as soon as results are received at the special Data Processing Center.

Timing of all speed events will be done electronically, and recorded by Longines printing timers. The time standard for this device will be a Longines quartz clock, the first portable time-

Performances of individual contestants will be punched into cards and fed to a RAMAC computer to determine the scores in each event. Results are produced in two minutes.

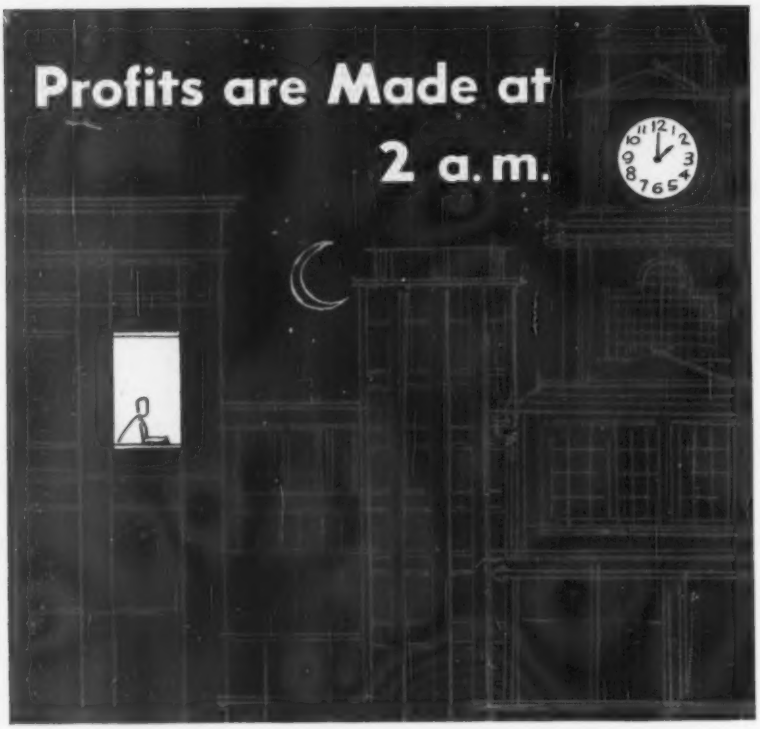
piece with an absolute precision record for a 24 hour period. This virtually eliminates human error. The printing timer starts recording by an electronic impulse as soon as the individual participant strikes a wire rod, and stops when he passes through a sensitive infra-red light at the end of the course. Results are double checked electronically and manually by official timers. The recording timer is a set of hammers which strike printing wheels over which are carbon ribbon and paper tape. The timer can read increments up to 2000ths of a second. The printed record is identified as to start and finish. All times will then be reported to the center by telephone.

A winner in the cards

In complicated scoring events, such as figure skating, electronic adding machines will be used. The nine judges display scores at the end of each performance. These results are punched into the skater's card and fed into RAMAC. The machine multiplies the score of each judge by a "difficulty" factor to derive the skaters' points per figure, then stores the results until the contest is over. In this, as in all events, the rules governing the scoring have previously been stored, to be computed with all the contestant scores for a total. All scores are verified and officialized in the Accounting Room.

Both timed and scored events will be reported to RAMAC. Judges report any penalties or disqualifications on a penalty card, which will be added to the computation after RAMAC selects official rules previously stored in its memory for scoring individual events. The final results of a single contest and the order by rank will be punched automatically into teletype tape for transmission to the judges' stand and remote press centers. Simultaneously Multilith master copies are printed out in English and in the official language of the games—French. The masters are used for immediate, daily news releases, and then sent to the Multility-Xerox Center, located in the press, radio and television building. This center combines the efforts of Addressograph-Multigraph Corp. and Haloid Xerox Inc. A copy of each certified release will be photographically reduced by the xerographic transfer method and more than 120,000 duplicated copies produced daily, with complete official and final results.

"The Official Final Results" will represent perhaps the greatest achievement of automation in the Olympics. This report, which formerly took many months to compile and print will now be readied in three and one-half hours; in plenty of time for the almost 5,000 Olympic officials, athletes and representatives of the press, radio and television to take them home at the close of the 1960 Olympic Winter Games. ■



The City sleeps, but this business goes on as usual, with the help of Baltimore Business Forms. Day and night customers phone their orders to central headquarters. Robot machines, in branch delivery offices, print orders simultaneously on troublefree Therm-O-Seal Handy-Fast Forms, recommended by the Baltimore Business Forms Systems Advisor. When morning comes . . . nighttime orders are completely written . . . ready for delivery without delay. The profits have been made . . . while the city sleeps.

Write or phone the Baltimore Business Forms Company for the interesting report . . . "A Robot Writes." Perhaps some of these money-making methods may be adapted to your own business.

Baltimore Business Forms

Division of the Baltimore Salesbook Company

3126 FREDERICK AVENUE, BALTIMORE 29, MARYLAND

For More Information Circle Reader Service Card No. 2-69

Systems Man

Continued from page 22

problem from other types of company specialists; the communications engineer, the data processing programmer and the manufacturing or production specialist, for example. Together they have evolved the concept of integration among administrative processes, procedures and systems on a company-wide basis.

Here is an example of a typical write-up of the programs of a systems and procedures department, which has adopted the new way of performing these duties.

Integrated Systems Program: Identify related procedures, which can be put together into an integrated company system, without regard to departmental lines. Coordinate with all other programs.

Coding Program: Establish for each group of procedures uniform codes; accounting, product identification, changes in custody of products, classification of materials and supplies, employe number, employe status and other codes of a functional nature to permit mechanical or electrical processing, including the consolidation of like transactions.

Communication Systems and Equipment Program: Review the various types of communications systems and data processing equipment to determine those best adaptable to the company's information handling needs.

Organization Program: Insure that the systems developed and the company's organization are compatible.

Research Program: Maintain liaison with other companies, equipment manufacturers, and technical societies to keep abreast of developments.

Taken all together, these programs are a big bite for even the most qualified systems departments; but take it they must, if the needs of their company are to be properly fulfilled.

How big a bite such an endeavor can be, is illustrated by the Shell

Oil Company's approach to the problem.

Making the reasonable sound assumption, that at the core of processing information on an integrated basis were the requirements for financial and operating planning and control, the methods department developed a schematic outline of a breakdown of the elements involved *(See page 22.)* It showed, for this particular company, that there were five major internal influences having direct bearing on planning and control. These are: producing crude oil and gas, refining crude oil and products, movement of crude oil and products, movement of materials and supplies, and personnel actions. Each of these subjects, in turn, was found to have up to 10 satellite components of its own. With each of these components numerous types of transactions could be identified. Each transaction and the location of its occurrence thereupon assumed considerable significance. This was true particularly because the company is nation-wide in scope, and is well decentralized in organization and in authority.

Divide and conquer

A second assumption was that if each transaction could be recorded once and thereafter be processed, summarized and consolidated, mechanically or electronically, more timely and actionable information could be assembled, and it would be more accurately interpreted. Many other companies' experiences have proven this assumption correct.

But how do you go about putting such a solution into effect in an organization with some 50 or more offices, with greatly diversified functions?

As in all cases where a complex of inter-related projects is to be undertaken, the planning phase of the study received prolonged attention from the methods department staff. In the situation under consideration, about a year was spent, not only in probing all facets of the problem which could be anticipated, but also in determining how each segment related to and was affected by the others. A flexible time-table was worked out for simultaneous or consecutive completion of the projects into which the over-all objectives were divided.

The methods staff had been reorganized according to the programs previously listed to accomplish the purposes of the review. Additional company specialists in the pertinent subject fields were assembled to assist in the projects.

All plans stemmed from a comprehensive concept that one main basis for all decision-making at all management levels was the rapid consolidation and proper interpretation of transaction data. Since the most effective plan of attack seemed to be to pursue each major part separately, the ordering, shipping and billing procedures combination was the first to be reviewed.

Why integration?

At the present writing these procedures are under test in several different types of offices in the company. When proven under actual operating conditions they will be further extended. At that time another set of procedures will be selected for similar treatment.

What a far cry from the simple systems and procedures programs of a decade ago! But had not the older programs leading to basic standardization been carried out, the new programs of comprehensive integration would have been almost impossible to undertake.

Why undertake integration at all?

Why undertake even the programs of the 1940's?

The answer to both questions is —business competition. The reduction-in-cost factor is evident in both sets of systems programs; but there is one difference between the two. In the first instance, savings were almost immediately evident. This was because the projects were completed in comparatively short order and their economic worthwhileness could be promptly assessed.

In his new role as leader of the systems "integration" movement, the systems and procedure man must be able to present a convincing argument to the highest executive control, an argument that will sustain their patience and their confidence. For the ultimate savings from an integrated systems program, which is long range in character, do not come at once. But, the program will bring eventual and substantial savings in administration and operation—an important factor in the competitive battles that lie ahead. ■

next month . . .

The Textile Industry Swings to Data Processing

Spurred on by sagging profits and increasing inventory control problems, the nation's huge textile industry is moving full speed into EDP systems and has formed a 40-member Textile Data Processing Association.

COMING

MANAGEMENT and BUSINESS AUTOMATION is now conducting the most comprehensive survey of salaries, positions and responsibilities related to computer installations in data processing history. Some 1,200 companies are participating. If your organization has not received its survey form, but is desirous of participating in this important study, please contact the MBA Research Department immediately.

MBA Showcase

New Products for Business Automation

Input-Output Units

A group of electronic data input and output machines known as the Royal McBee Codewriter has been announced. The units, which print characters serially, provide man-machine coupling to data processing and data handling equipment. The Input unit allows variable data entry and record creation for computer data processing, creation of media for automatic control device input and other applications. The out-put device creates a permanent record of complete or exception data. Circle No. 2-8

Rotating Record File

Only 30 square inches is needed to hold up to 6,000 record cards in the 6½ by 4-inch size Joyce Rotary File by Joyce Record Systems, Inc. This Model 32-C includes three sections on a rotating base, the master record cards, index dividers with inserts, reorder signals and a cover. The unit is designed for desk or counter use. Each of the three separate sections turn completely around in either direction and any section can be turned to the operating area. It can be used by more than one person since cards can be read or posted from any position around the file. Circle No. 2-1

Closed-Circuit TV Camera

The Model 70-A closed-circuit TV camera, recently introduced by the Dage Television Division of Thompson Ramo Wooldridge Inc., has been designed for heavy-duty industrial as well as general closed-circuit operations. It features a newly-developed transistorized video amplifier which eliminates microphones and provides 600-line resolution. Circuits in the self-contained camera make immediate light adjustments. A similar model, the 70-AR, has a remote control optical focus if needed. Circle No. 2-7

New Series of "Lazy Susan" Rotary Files

Acme Visible Records, Inc. has announced a new series of its rotary files that turn in the "Lazy Susan" fashion at the touch of a button.

With the files, it is possible to have up to 250,000 record or data files available in seconds to any of from one to 12 users seated at desks around the circumference.

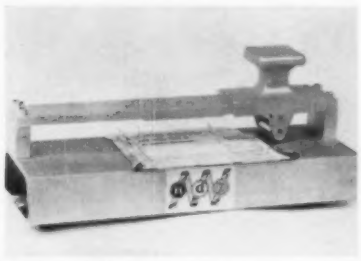
A similar unit to the one pictured above was described in the Chicago & Northwestern Railroad "Car-Fax" article, (March, 1959 issue).

Diameters range from 40 inches for desk top models to 77½ inches for the big power files. From one to six reference tiers are available. Circle No. 2-11

Xerography Adapter

An attachment, designed for the new Litho-Lab camera by the Macey Co., permits its use in making a direct positive as required in the xerographic process. This new device allows Litho-Lab users to make conventional negatives of both line and halftone work as well as plates for the dry copying process on the same unit. The attachment is now standard equipment on the camera-darkroom combination which was introduced, itself, only last October. Enlargements up to 200 per cent are possible with the new equipment. Circle No. 2-5

Credit Card Recorder



National Data Processing Corp. has developed the NDP Readatron, a low-cost credit card imprinter for use with credit plans which employ embossed or debossed cards. In quantities of 1,000, the units sell for $21 each. They are capable of imprinting invoices suitable for automatic reading, and a special engineering feature is said to prevent the wrinkling of invoices while in the unit. The M-103 Recorder is also described as extremely simple in construction and easy to operate as well as being very rugged. Models are available for use with any sized punched card or plain paper invoice sets. Circle No. 2-3

Data Acquisition-Reduction System

This data acquisition and reduction system by Digitronics Corp. was specifically designed to record very large quantities of data from many varied sources, both remote and local. Once the information is in the system, certain plug-board controlled data is abstracted, analyzed and automatically punched out on cards. The original data is gathered, peak-detected and digitalized by the acquisition unit and recorded on magnetic tape. It is not destroyed, which means it is available for additional analysis in greater depth if necessary. All units are standard equipment. Circle No. 2-2

PAPERWORK EFFICIENCY SOARED FOR AMERICAN AIRLINES-WITH DAVIDSON DAV-A-MATIC
250-plus masters are reproduced every day-by just one Dav-A-Matic!

American Airlines Jet Maintenance and Engineering Center, Tulsa, Oklahoma, has a Dav-A-Matic—and saves at least 50% on the time required for each job. Dav-A-Matic's automatic plate-changer does the trick. No stopping is required to change masters between jobs.

American Airlines uses its machine solely for short-run work, such as interplant bulletins, aircraft log sheets, sketches, and training materials. Straight copy matter is typed directly onto the master, while illustrations are transferred by Xerography.

"One feature we like," says Mr. J. K. Schladale, Supervisor of Office Services, "is the universal systems feed that lets us run papers and forms of different weights and sizes sequentially. This cuts clerical effort, improves accuracy, saves time. We also like the convenience of the automatic blanket cleaner, the simple controls, and the quality of the finished product."

Learn more about Dav-A-Matic—and the important savings it brings! Write today for free booklets, and full case history on Dav-A-Matic at American Airlines.

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29 Ryerson Street, Brooklyn 5, New York

For More Information Circle Reader Service Card No. 2-70

Compact "Thermo-Fax" for Personal Use

Minnesota Mining has introduced a compact, lightweight "Thermo-Fax" copying machine designed for personal copying use in multiple office locations — called the "Courier". The desk-top unit operates exactly like the other dry-process copiers by 3M. It weighs 25 pounds and is operated by a single control. It measures 14½ inches wide, 12½ deep and 4½ inches high. Selling price is $199. It accommodates the new bond-weight paper. Circle No. 2-4

new 50-station collator

Fully automatic . . . unprecedented performance without the penalty of high price or space waste!

Announcing a new dimension in collating versatility, accuracy, speed and compactness — the all-new, completely automatic Rotomatic by Thomas Collator Industries, Inc. If you collate in volume, you'll want all the details on the Rotomatic's ease of total operation and multiple savings. For complete information and prices, without obligation, write today.

- Accurately collates, counts, staggers or stitches 25,000 sheets per hour
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- Occupies only 17½ sq. ft. of floor space
- Loads in less than 7 minutes . . . no adjustments for vacuum systems, fans, weights, finishes
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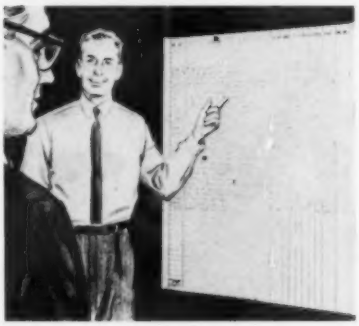
Thomas Collator Industries, Inc.

Dept.GG4,100 Church Street, New York, New York

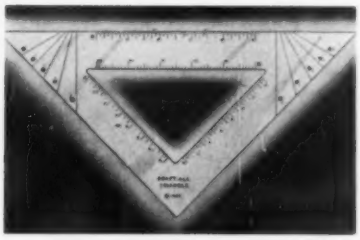
For More Information Circle Reader Service Card No. 2-71

Control/Schedule Chart



Memo Flex is a new control/scheduling device by the Garrison Machine Works, Inc. Designed for use in controlling customer orders, reservations, maintenance, sales, personnel, machine loading production and other similar programs. It presents a visual picture of operational details without the need for any other devices. The board surface is baked enamel which is 31½ by 38 inches in size. Complete kit includes memo strips, stripping tape, title letters, a mechanical grease pencil and a box of grease leads. Entries can be made right on the memo strips and removed with tissue or cloth. Circle No. 2-6

Drawing Instrument for Business Forms



A new drawing instrument that the manufacturer, Draft-All Triangle Co., states can be used for designing almost all types of business forms and office layouts on ordinary blank paper is now available.

It is a standard eight-inch 45-degree/90-degree, clear, plastic triangle that combines the facilities of a protractor, straight edge and scales. Four scales common to office form design and guide lines for construction of angles are stamped into the plastic. Circle No. 2-10

Copies On Request

The following booklets, catalogs and brochures are considered of interest to readers of MANAGEMENT and BUSINESS AUTOMATION. Copies can be obtained by using the convenient Reader Service Card and circling the corresponding key numbers.

Transceiver Tester—A four-page booklet describing the features and performance of a new automatic acceptance tester for TACAN transceivers is available from the Stromberg-Carlson Division of General Dynamics Corp. Circle No. 2-25

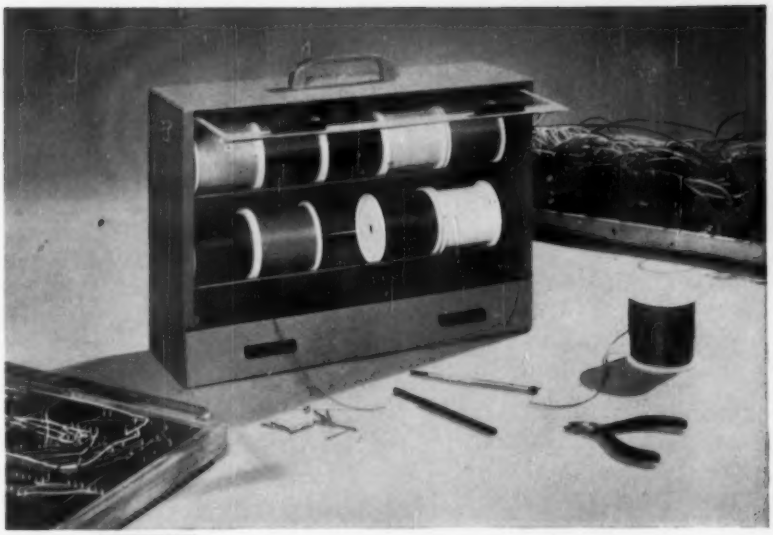
Sketch Sheet for Preparing Magnetic Ink Check Printing—Autographic Business Forms, Inc. has designed a sheet which can be used to position the exact locations of all preprinted data normally included in check printing. It illustrates how to convert present fractional designations of bank number and routing symbol into the eight digit number required by the ABA program. Circle No. 2-26

Microfilm Indexing and Filing Techniques—A booklet describing economical and efficient uses of microfilm in building an indexing and filing system is available from the Charles Bruning Co., Inc. Circle No. 2-27

Magnetic Tape Recorder/Reproducer—The Ampex FR-100B is fully described in a new 20-page booklet. Performance figures, accessories and on-the-job applications are presented. Circle No. 2-28

Custom-designed Data Processing Equipment—A four-page brochure from Digitronics Corp. describes all solid-state data processing equipment custom-tailored for various commercial applications. Circle No. 2-29

Equipment Leasing—The "Pros and Cons of Equipment Leasing for Smaller Manufacturers, Department Stores and Supermarkets" is a study prepared by The Foundation for Management Research. Data tables and charts illustrate comparative costs. Circle No. 2-30



GC PANELLOGIC
...an all-new approach to Control Panel Wiring

This GC panelLOGIC kit has been scientifically developed to facilitate your work and lower costs in wiring control panels. It will produce neater panels that are more compact and easier to handle and store. Terminals will be securely affixed, yet readily removable. Circuits will be extremely simple to check and trace.

You know from experience how tangled and bulky a control panel can be when wired by old fashioned methods.

By contrast, panelLOGIC is neat with taut wires that you custom cut to exact lengths. Each card field or machine function can be color coded for easy visual tracing. Wired panels are more compact permitting each rack in the storage cabinet to be used, and eliminating accidental wire removal. 2, 3, 4 or 5 way color-coded split wires can be made in any length. Circuitry checks through terminal posts can be made without removing wires from panel or panel from machines.

You'll find that wiring with panelLOGIC is quick and easy. Once you put panelLOGIC in regular use, we know you'll agree with other users that you'd never go back to the old way of wiring control panels.

SEND FOR FREE BROCHURE!

A new full color brochure describing panelLOGIC tools and materials and showing in detail how to wire panelLOGICLY is yours for the asking. For your FREE copy, send the coupon today!

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For More Information Circle Reader Service Card No. 2-72

NEWS

Arizona Bank Installs MICR System

The First National Bank of Arizona is the nation's second to install a completely automated demand-deposit accounting system using magnetic character reading. Fifteen members of the bank are undergoing an intensive training course at the General Electric computer plant in Phoenix. Shown here is L. L. Kilfoyle, GE engineer, who is pointing out highlights of computer operations to bank personnel, left to right, J. E. Perry, assistant cashier, Larry W. Deuel and Mrs. Elizabeth Bernhardt.

MBA Pilot Study on Card, Tape Buying

As part of its "Market Facts" program, MANAGEMENT AND BUSINESS AUTOMATION has released the results of a pilot study made to define the responsibilities for buying cards and tapes for data processing installations. The survey was mailed to the controller or treasurer of 300 companies selected at random from among the magazine's circulation.

The returns (53.3 percent) indicated 159 companies using punched cards, 44, punched tape and 35, magnetic tape. Where punched cards were used, the primary responsibility for selecting the source of supply was divided chiefly as follows:

Mgr. Tabulating Dept.	64
Mgr. Data Processing	46
Purchasing Agent	38
Controller	29
Mgr. Systems and Procedures	19
Office Manager	4

The study revealed that 73 companies used more than one source of supply as against 63 who bought exclusively from one supplier. Where punched or magnetic tape was used, 46 companies indicated that the general responsibility for selection of source was similar to that indicated for punched cards, while 15 replied that others were responsible. Among the latter were such titles as Mgr., Technical Services, and Billing Dept. Mgr.

Copies of the study are available upon letterhead requests to the Research Dept. of MANAGEMENT AND BUSINESS AUTOMATION.

Army Unveils World-wide Electronic Supply System

The Army recently showed one of the nation's most powerful electronic data processing systems, to be used as the heart of a new global military supply network.

The system, processing requisitions for Transportation Corps aircraft, marine and railway equipment, is said to be five times faster than previous methods, and it is expected to save half a million dollars a month in operation.

More than 1,000 requisitions will flow into the TMC computer daily for parts and equipment. The system, an IBM 705 III, will convert the requests into shipping orders and transmit them automatically to large supply depots spotted around the country.

In New IBM Post

Gilbert E. Jones

Gilbert E. Jones has been named to the new position of divisional president of the Data Processing Division of International Business Machines Corp. He formerly was general manager of the division.

Mr. Jones heads the activities centering around the leasing and sales of the complete line of IBM punched card accounting machines and electronic data processing systems for all domestic markets.

Test Computer For Patent Searching

The U.S. Patent Office is currently testing a computer system which may cut the time of searching for a patent from as long as a day to about half an hour.

Patent Commissioner Robert C. Watson said the new system is being tested first on a huge mass of patent data covering chemical compounds that form the basis for many commonly used plastics.

A government-industry research team, formed by the Office of Research and Development at the Patent Office and the Research Division, Textile Fibers Division, E. I. du Pont de Nemours & Co., Inc., has adapted the agency's punched card file, which previously could only be processed on specially built equipment, to commercially available data processing equipment.

The team is working with a Bendix G-15 digital computer in the test program.

The system, as programmed, can quickly identify the exact factors being sought and even identifies "near misses". That is, it pinpoints and records combinations of elements or the performance of these elements when they are similar to the compounds or performance characteristics being sought, even though they don't exactly meet the specifications of the searcher.

The program even "weighs" these "fringe" compounds for the searcher and tells him in effect which is the best probable alternative for the job, which is second best, etc.

The resulting patent list also enables the searcher to properly evaluate the novelty and patentability of his own development.

Ben S. Graham Dies

Ben S. Graham, 59 director of the systems and procedures division of the Standard Register Co., and a pioneer authority in paperwork simplification, died January 7, following a long illness.

Mr. Graham was considered an international authority in the field and had lectured and taught extensively throughout the country.

So. California Edison Installs Computer

Southern California Edison Co. has announced that it plans to install an electronic data processing system to handle the billing of 1 million of its 1.6 million customers in the Los Angeles area.

Edison is the first public utility in Southern California to adopt electronic data processing. It is also considering using its computer (Honeywell 800 system) to prepare for an anticipated customer-list expansion over the coming years.

RCA Names DP Heads

Appointment of Leonard S. Holstad as vice president of the Electronic Data Processing Service and Donald H. Kunsman as general manager of the Electronic Data Processing Division has been announced by Radio Corp. of America.

Holstad will head the installation and servicing of the 501 computer systems. Kunsman will direct activities in the field of data processing including the operation of the computer service centers.

NOW! PRINTED PIECES
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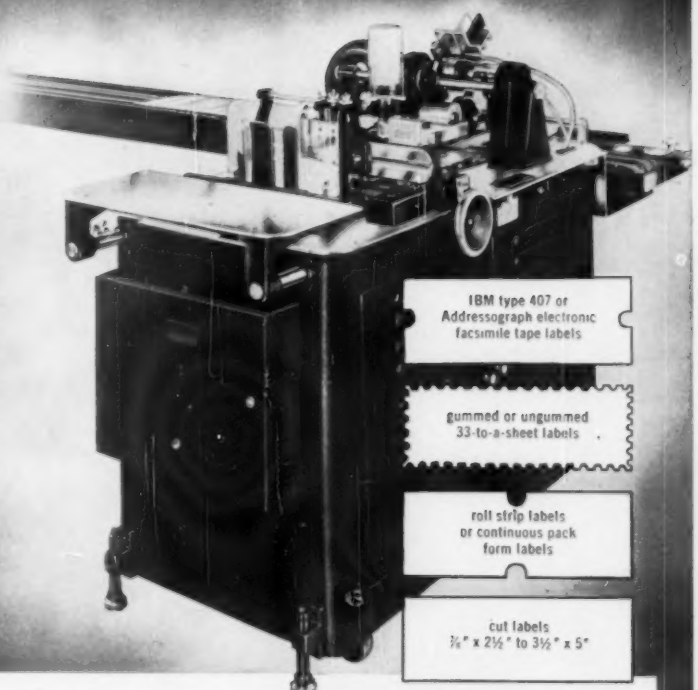
IBM type 407 or Addressograph electronic facsimile tape labels
gummed or ungummed 33-to-a-sheet labels
roll strip labels or continuous pack form labels
cut labels ⅜" x 2½" to 3½" x 5"

Applies labels addressed from your punched cards, plates, stencils and other addressing systems. *Even applies cut or individual labels!* Trims costs by applying in excess of 14,000 labels per hour. Handles post cards, insertion cards, pamphlets, brochures . . . all sizes of envelopes . . . and lightweight booklets, magazines, catalogs and quarter-fold tabloids. Compact, too! And so simple that it can be operated by your own personnel.

The Cheshire Model E.

Write for descriptive brochure

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For More Information Circle Reader Service Card No. 2-73

Letters

Continued from page 12

and punched cards is no different than the information that an office worker keeps in his file on an 8½ by 11 sheet of paper that was a preprinted form designated by that same office worker.

The professional systems man, good or bad, will prescribe systems' changes which may affect a form or an entire procedure on the basis of his diagnosis of the information he has collected; he depends upon information relayed to him and his analysis of this information. One cannot expect to find the best brain specialist taking care of a practice in a small town in East Jesus, Rhodesia. What you are more apt to find is a witch doctor; right or wrong, he is performing the function and in some cases successfully.

In the country today, there must be 40,000 small companies each of which has a need for a systems man . . . each of which will undoubtedly have someone perform that function rightfully or wrongfully.

How do you heat your "ivory tower" in the winter, Mr. Griffith.

T. E. Brenner, Manager,
Systems & Procedures Dept.
Addressograph-Multigraph Corp.
Cleveland

Dear Sir:

I wish to register a strong protest against both the text and the implications contained in the article in the December issue entitled "A Program for Selecting Data Processing Personnel" by Deborah Blumer.

Now sir, I have never met Miss Blumer, who no doubt is both personable and charming. My remarks are not directed against her personally. I do, however, protest and take issue against the utter drivel contained in her article and against her associates, the self-styled "Management Counselors."

Do both Miss Blumer and Halbrecht Associates actually believe in the garbage they are peddling to apparently intelligent people? Evidently, these self-named "experts" have the effrontery to imply that they accept responsibility for "directing and guiding" human lives—or that of "placing the right man in the right job."

Regardless of education or experience, I deny that these people have the ability to accomplish what they imply. Nor do they, in any circumstances, have the right to move human beings around like machines. These so-called "experts" never accept their just responsibility for irreparable errors they commit against fellow human beings.

In short, the "experts" accept a fee for their "Human Engineering" but never the important responsibility inherent in such a risk.

Apparently, the recent rigged TV quiz programs probe could be profitably extended to other "services."

Henry L. Spies
New York, N.Y.

Ed. Note—We thought that Miss Blumer, who is indeed both personable and charming, in addition to being a most qualified psychologist, made it abundantly clear that psychological interviewing and testing was not fool-proof. However, it still offers valuable assistance to management in selecting qualified personnel from within the ranks. We're certain managements' results will support her case.

At TIDEWATER OIL COMPANY invoices and advertising material are gathered, inserted and mailed automatically every month by a PHILLIPSBURG INSERTER

Phillipsburg Inserter installation at Tidewater Oil Co., Los Angeles

Cycle Billing Problems?
Phillipsburg Inserter simplifies, speeds up cycle billing!

Manned by one operator, **the Phillipsburg Inserter —with exclusive vacuum feed—stuffs invoices and related inserts into envelopes, seals, prints indicia, counts and stacks—at rates up to 6,000 pieces per hour! Pieces come off the machine all ready for the Post Office. Tidewater is thus able to mail statements early and close cycles on time!**

Phillipsburg Inserter's *open feed* eliminates stapling bills. Send coupon for complete details.

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Bell & Howell Phillipsburg
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For More Information Circle Reader Service Card No. 2-74

MBA's Calendar

February 29-March 3—National Institute of Management, Inc. two-day seminars, one on production control, the other on inventory management, Cleveland Sheraton, Cleveland. Contact NIM, 1419 National City Bank Bldg. Cleveland 14, Ohio.

February 29-March 3—17th annual Chicago Seminar, and Business Show, Office Management Association of Chicago. Conrad Hilton. OMAC, 105 W. Madison, Chicago 2, Ill.

March 21-24—IRE National Convention. In the Coliseum and Waldorf Astoria Hotel, New York City.

March 23-25—Career Management Conference Clinic sponsored by the National Machine Accountants Association, Chicago, Conrad Hilton Hotel. Contact Ken Iles, P.O. Box 1620, Chicago 90.

March 24-25—Northeastern Divisional Data Processing and Computer Conference, NMAA. Sponsored by New York Chapter at Statler-Hilton Hotel, New York City.

March 26—Fourth annual symposium on recent advances in programming methods conducted by Central Ohio Association for Computing Machinery. Contact R. K. Kissinger, c/o Nationwide Insurance Co., 246 N. High St., Columbus, Ohio.

March 29-April 1—13th annual Southern California Business Show sponsored by Los Angeles Chapter, National Association of Accountants. Hotel Ambassador, Los Angeles.

April 8-9—Third annual Regional Data Processing Conference, NMAA. Syracuse, N.Y. Contact Robert Bell, Drug Trading Co., Ltd., 15 Ontario St., Toronto, Ontario, Canada.

April 18-19—Third Annual Conference on Automatic Techniques, Cleveland-Sheraton Hotel, Cleveland, Ohio. Jointly sponsored by the ASME, AIEE and IRE. Write J. H. McRainey, Room 530, 1213 W. 3rd St., Cleveland 13, Ohio.

April 22-23—Greater Cincinnati NMAA chapter sponsoring Southeastern district regional conference, Hotel Netherland Hilton, Cincinnati. Write chapter at P.O. Box 863, Cincinnati 1, Ohio, for information.

May 3-5—The 1960 Western Joint Computer Conference, Jack Tar Hotel, San Francisco.

May 22-27—41st International Conference and Annual Exposition of the National Office Management Association. Queen Elizabeth Hotel, Show Mart, Montreal, Canada.

June 22-24—National Conference and Business Show of the National Machine Accountants Association, San Francisco, Calif. Mark Hopkins and Fairmont hotels and California Masonic Memorial Temple for exhibits. For information, write P.O. Box 3617, Rincon Annex, San Francisco 19.

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EDITORIAL

Systems Start At the Top

Among the many responses to our recent editorial remarks on the importance of the "internal" systems staff (See Letters, page 12.) one in particular emphasized a key point. Mr. C. A. Marquardt, vice president of the State Farm Mutual Automobile Insurance Company, while stressing the fact that the penalty for inefficient methods and procedures is eventual failure of the business enterprise, concludes that "The ultimate responsibility for the improvements does not rest upon any one individual or department. It rests with an entire organization—no one is exempt." We would like to add further emphasis to Mr. Marquardt's excellent observations.

Good systems, like good management, must start at the top of a corporate structure and filter on down through the entire organization. As the cigarette commercial says, "It's what's up front that counts." When top management is systems minded, you find very few problems due to poor methods or procedures. They select qualified people and back them with authority to transcend all departmental barriers. The management's attitude is also reflected throughout the organization, with supervisory personnel taking an active interest in systems improvement.

This is the ideal climate for effective systems and procedures activity, but unfortunately peculiar to so few companies. Far more common is the organization that uses the systems specialist as merely a paperwork repairman; limiting his efforts within the narrow boundaries of a billing or accounting operation where he works with but a piece of a system—never the whole.

This is the man that some would call a "glorified forms expert, lacking in total systems concept." There are some systems people whose performance has justified such a description. But, the majority have both the ability and vision to create a total systems program if management will give more than lip service in carrying it out.

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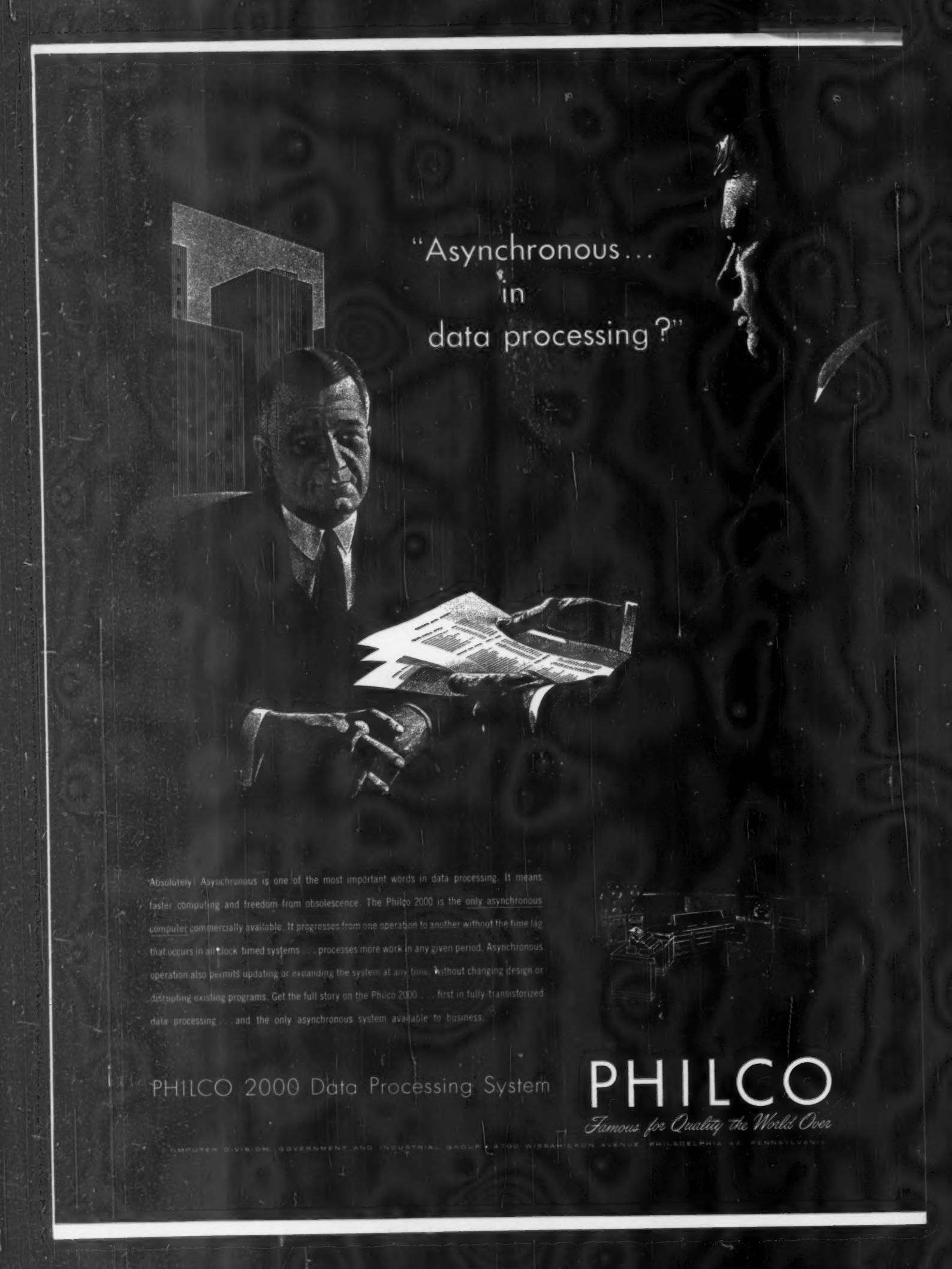

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